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Using Sense of Coherence to Understand Suicidality Among American Indian and Alaska Native College Students

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Using Sense of Coherence to Understand Suicidality Among American Indian and Alaska Native College Students

by

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Dedication

In opening to our experience of life as it is, we often find that it does not meet our expectations of what is should be. Perhaps we don't fit the picture in our mind of who we should be. Perhaps those we love don't measure up to our ideals. Or we find the state of the world disheartening, even shocking. Reality is continually breaking open our heart by not living up to how we would like it to be. If we can also open to our broken-open heart, it has a bittersweet quality. Reality never quite fits our fond hopes—that is the bitter taste. The sweetness is that when reality breaks our hearts open, we discover a sweet, raw tenderness towards ourselves and the fragile beauty of life as a whole.

—John Welwood

This dissertation is dedicated first and foremost to my dad, whose choice to leave this world I both respect and regret. Your absence has inspired me to live more fully and the pain of your death has offered invaluable perspective regarding the importance of compassion and connection. I shall remain an artifact of your life, and your profound impact shall remain an artifact of mine. This work is also dedicated to Jeremy, Derrick, and Jeff. Your suicides shook me at an early age. My research and practice in the field of mental health is for you and for other young people like you.

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often ignored in our society. Your work helped provide me with the courage to examine an issue that is so rarely discussed and to highlight a community so often oppressed and silenced.

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Using Sense of Coherence to Understand Suicidality Among American Indian and Alaska Native College Students

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The American Indian (AI) and Alaska Native (AN) young adult population consistently experiences the highest suicide rate of all ethnic groups in the United States. Unlike other groups, whose suicide rates peak in middle age, suicide among AI/ANs is most common among college-aged individuals. Previous research focusing on suicide among AI/AN populations is limited in its scope and has focused almost exclusively on reservation-based individuals, despite that the vast majority of AI/ANs now live in urban areas. Examining the experience of suicidality among urban AI/AN young people may contribute to a developed understanding of how to prevent suicide among this unique and unstudied population. As such, this dissertation sought to address the gaps in current knowledge of factors that influence suicidality among urban AI/AN college students. Using multiple linear regression analyses, the current study explored the prevalence of distress and suicidality among this group, as well as the prevalence and importance of common suicide risk factors. Additionally, the protective nature of certain malleable psychological factors, including sense of coherence and mental health, was examined. Results indicated that AI/AN participants had significantly higher rates of distress and suicidality as compared to participants of other races. Additionally, it was found that childhood exposure to

familial stressors and abuse were important predictors of distress and suicidality and that similar racial disparities in such exposure exist among urban AI/ANs as is true for reservation-based populations. Sense of coherence and mental health were also strong predictors of distress and suicidality but were unable to buffer against the risk that one acquires through increased exposure to adversity. The current study provides important directions for future research as well as implications for suicide prevention among urban AI/ANs that capitalize on the strength and resilience of this population.

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Chapter 1: Introduction

In 2014, the World Health Organization (WHO) published a report emphasizing the importance of suicide prevention as a global imperative due to increasing rates of suicide deaths; every forty seconds, someone in the world dies through self-inflicted means. In the United States, there has been a surge in suicide rates that has recently reached a 30-year high (Curtin, Warner, & Hedegaard, 2016). National suicide rates have gradually increased every year between 1999-2014, with a pace of increase greater since 2006. More specifically, rates have increased 24% in this fifteen year period; from 10.5 per 100,000 in 1999 to 13.4 in 2014 (Curtin, Warner, & Hedegaard, 2016). In 2015, the most recent year that data are available, 44,193 people died from suicide, compared to 29,199 in 1999 (Centers for Disease Control [CDC] Injury Prevention & Control: Data Statistics (WISQARS), 2016).

Rates of suicide vary significantly based on several demographic factors. For instance, suicide is the second leading cause of death among those 18-24 years of age, accounting for 4,505 deaths in 2015 (CDC Injury Prevention & Control: Data Statistics (WISQARS), 2016). For every completed suicide, there are significantly more attempts. Approximately 94,000 young adults in this age group received emergency medical care in 2015 due to self-inflicted injuries (Office of Disease Prevention and Health Promotion, 2015; CDC Injury Prevention & Control: Data & Statistics (WISQARS), 2015). Importantly, since 1999, the percent increase in age-adjusted suicide rate has been greater for females (45% increase) than males (16% increase), resulting in a narrowing of the gender gap in suicide (Curtin, Warner, & Hedegaard, 2016). The prevalence of suicidal behavior among young people has become a widely recognized concern of many, including parents, educators, health care providers, government officials, and researchers. As such, various outreach campaigns are dedicated to prevention of suicide.

Despite this being a well-known phenomenon, two of the groups most profoundly affected by suicide are often neglected, both in the media and in research. These groups include American Indians (AI) and Alaska Natives (AN), whose young adult population consistently experiences the highest rate of suicide of all ethnic groups in the United States. In 2015, for example, the suicide rate among AI/ANs ages 18-24 was 23.9 per 100,000, compared to the next highest rate of 15.6 for white individuals in the same age range (CDC Injury Prevention & Control: Data & Statistics (WISQARS), 2013). In total, suicide accounted for 27% of all deaths among AI/ANs between the ages of 18-24 during 2015 (CDC Injury Prevention & Control: Data Statistics (WISQARS), 2016). Despite the disparities in suicide among AI/ANs, little progress has been made in addressing the underlying causes that are unique to this population. The literature on AI/AN suicide is limited in both the number of studies completed and in the scope of existing research. Since the 1970s there have only been approximately 115 published articles focusing on AI/AN suicide, with more recent contributions being especially scarce (O'Keefe et al., 2014). In fact, using the Academic Search Complete database, a search using the terms *American Indian* or *Alaska Native* and *Suicide* showed that between 2000 and 2017, only 27 peer-reviewed articles that contained original empirical research were published.

Throughout the last several decades, research efforts in this area have generally been epidemiological in nature, and the limited number of empirical studies that do exist have focused primarily on identifying risk factors frequently present among AI/AN populations. Sample sizes in these studies are often small and the diverse nature of the many AI/AN tribes is rarely addressed (Olson & Wahab, 2006; O'Keefe, et al., 2014). In addition, nearly all of the studies that examine AI/AN suicide have been reservation-based, despite the fact that nearly two-thirds of AI/ANs live in urban areas (Zuckerman, Haley, Roubideaux, & Lillie-Blanton, 2004; Urban

Indian Health Institute, 2013). This is important to note as urban-based AI/AN youth have been found to have similar suicide attempt rates as reservation-based youth but different risk factors to suicidal behavior, which have largely been unstudied (Freedenthal & Stiffman, 2004).

The last several decades have seen a substantial migration of AI/ANs from rural or reservation-based areas to more urban areas. Unfortunately, movement into the American metropolis has not relieved the experience of poverty and marginalization among AI/AN populations. Instead, urban-based individuals often face the same adversities that plague the reservation-based communities. Although the large majority of AI/ANs now live in urban areas, this subset of the population is especially neglected from suicide research. One reason for this is that urban AI/ANs are geographically dispersed, making research sampling difficult. As previously noted, the suicide rate among AI/ANs is highest among college-aged young adults; as such, suicide research focusing on AI/AN college students has the potential to lend important insight into the experience of suicidality among this unstudied population. The voices of AI/AN college students are often silenced in research focusing on college student mental health, however. Often times AI/AN college students are racially categorized as "Other" due to their limited numbers, and as a result, they are frequently left out of studies' analyses. Importantly though, the number of AI/ANs in the United States continues to grow at a disproportionately faster rate than the that of the general population (CDC, 2010). For instance, the AI/AN population (alone or in combination with other races) grew by 27% between 2000 and 2010; three times as fast as the total U.S. population during the same 10-year period. Additionally, the places in the U.S. with the largest number of AI/ANs include New York and Los Angles, and the largest proportion of AI/ANs live in Anchorage (CDC, 2010).

Overall, the disproportionate growth rate among AI/ANs requires that consideration be given to the unique needs of this population. Importantly, conditions of poverty and exposure to suicide risk factors are expected to remain stable among AI/ANs as these populations contend with issues that prevent them from receiving quality medical and mental health care (United States Department of Health and Human Services Office of Minority Health, 2017). As the urban-based AI/AN population continues to grow, their numbers on college campuses will increase, and culturally appropriate suicide prevention efforts will become more and more necessary both in the community as well as in college settings.

Suicide Risk Among AI/ANs

Previous research has established that a person's risk for suicide can vary greatly depending on the presence of certain risk factors. Several universal suicide risk factors can be detected among AI/AN populations. These include high poverty rates, low education, unemployment, and high rates of substance abuse (Advisory Group on Suicide Prevention, 2002). Other well-known universal suicide risk factors have been identified at higher-than-average rates among AI/ANs. Examples include history of mental illness, physical or sexual abuse, family instability, access to guns, frequent exposure to suicide, and prior suicide attempts (Borowsky et al., 1999; Wexler & Goodwin, 2006). In addition to these universal risk factors, these groups often face several additional risk factors to suicide as well that are not common to the general population. These additional risk factors include the experience of historical trauma, oppression and discrimination, and consequences of the socio-historical context, including fractured social structure and support systems among tribes (Tingey et al., 2014; Olson & Wahab, 2006; Freedenthal & Stiffman, 2007).

Limitations of Existing Research

Existing research has well established the presence of risk factors among reservation-based AI/ANs. Additionally, the correlation between these factors and suicidal behavior is also well known. However, suicide risk factors among urban-based AI/ANs remain unstudied and, instead, the experiences of reservation-based individuals are often generalized to this unique subset of the population. This generalization is problematic, however, as it assumes homogeneity among AI/ANs and ignores the diversity that exists among these populations.

The scope and applicability of the existing reservation-based research has other limitations as well. For instance, the emphasis on identifying those who are most vulnerable to suicide by the presence of unchangeable risk factors fails to aid in a more in-depth understanding of the suicidal phenomenon among AI/AN individuals, including what helps people cope successfully when faced with stress. To date, only one study has examined AI suicide using an empirically supported theoretical model of suicide (O'Keefe, et al., 2014). Using such a model can better support the effort to understand and explain suicide among these groups, including how vulnerability affects one's sense-of-self, psychological health, and resilience and what mechanisms are at play that aid in prevention.

Theoretical Framework of the Current Study

The current study sought to expand the understanding of AI/AN suicidality through use Antonovsky's (1979) salutogenic paradigm, which argues that focusing on the origin of health (salutogenesis), rather than the origin of disease (pathogenesis), allows for a better understanding of why some individuals develop disease while others do not. Research has shown that one's sense of coherence, a fundamental construct in Antonovsky's salutogenic theory, protects against suicidal thoughts and behaviors (Mehlum, 1998; Ristkari et al, 2005; Sjöström et al, 2012;

Edwards & Holden, 2001; Petrie & Brook, 1992). Antonovsky (1987) defines sense of coherence as a way of perceiving one's relationship to the world, including whether one thinks of their world as predictable, manageable, and meaningful. Antonovsky (1979) notes that sense of coherence is a quality of self that influences one's use of adaptive coping through utilization of generalized resistance resources, which include internal or external resources, such as resilience, self-efficacy, and healthy social connections. Societal and historical conditions, social class, and one's unique personality-shaping experiences determine the availability of generalized resistance resources. These resources ultimately influence patterns of experience and contribute to the development of sense of coherence. A high level of sense of coherence is thought to aid in the maintenance of health and psychological well-being, while a low level is theorized to make one more susceptible to psychological unrest (Antonovsky, 1987). The current study purports that examining AI/AN suicide through Antonovksy's (1979) salutogenic paradigm can help differentiate those who become suicidal during times of stress, versus those who do not, through an examination of protective qualities such as sense of coherence.

In addition to sense of coherence, Keyes' (2002) concept of mental health—defined as the presence of positive psychological symptoms—was also used to explore the protective nature of well-being among those with increased vulnerability to suicide. Similar to Antonovsky, Keyes has also advocated for use of the salutogenic paradigm in health research and promotion. Keyes operationalizes mental health using specific dimensions of well-being, including positive emotions, positive psychological functioning, and positive social functioning. Research has demonstrated that the presence of mental health serves as a protective factor and is associated with subjective and physical well-being (Ryff & Keyes, 1995). Keyes' concept of mental health was used in the current study as a supplement to sense of coherence; to provide additional

evidence of the protective nature of a positive sense-of-self or global sense of well-being. A more complete understanding of the relationship between these protective factors and the development of distress and suicidality can provide important information in regard to prevention and intervention at both individual and population-based levels.

Summary

Current suicide prevention efforts targeting urban-based AI/ANs are largely focused on identifying individuals suffering from acute suicidality and providing them with culturally appropriate crisis intervention. Crisis intervention is a necessary form of suicide prevention, however, a more complete understanding of one's suicidality can be found by acknowledging the wide range of thoughts that may occur during a period of distress, thus providing an opportunity to reach people before they progress to a state of crisis (Drum, Brownson, Burton Denmark, & Smith, 2009). Focusing attention to those individuals who may be predisposed to suicidal thoughts, but who have not yet reached a heightened level of distress and suicidality, may provide an opportunity to reach a larger number of people. Additionally, identifying the protective factors that thwart the progression from distressed to suicidal thinking shifts the focus of prevention from deficit- to strengths-based and can provide more malleable targets for intervention. The current study sought to explore this idea among urban AI/AN college students by examining the severity of their distress and identifying factors that predispose them to, and protect them from, increased risk. More specifically, the current study examined whether sense of coherence and mental health protect against progression of suicidality by moderating the psychological impact of certain risk factors that make one more vulnerable to suicide.

The ultimate goal of the current study was to garner unique insight into the experience of distress and suicidality among urban AI/AN college students. Importantly, a developed

understanding of AI/AN experiences requires replication of research findings and establishing trends over time. The limited number of studies focusing on AI/AN suicidality prohibits the creation of informed prevention efforts. Instead, such efforts must rely on information generalized from research that is not always culturally applicable. The current study adds to the existing base of research on urban AI/ANs and extends the literature by providing a theoretical and empirical groundwork necessary for future endeavors to build upon. Focusing on protective factors, including sense of coherence and mental health, offers targets for intervention that can be implemented on a population-based level. For instance, by bolstering protective qualities among a population of AI/AN college students—regardless of their acquired risk—more people can be reached before they enter a suicidal crisis. This type of approach can ultimately be useful in thwarting the progression from distressed to suicidal thinking and behavior, thus preventing serious suicidal ideation and suicide attempts.

Chapter 2: Literature Review

The following literature review will provide an overview of the issue of suicide among AI/AN populations. Limitations of the current research in this area will be discussed and the barriers to addressing these limitations will also be explored. Research on the prevalent suicide risk factors faced by many AI/AN communities will then be reviewed, followed by a discussion on the constraints of risk-based research. Antonovsky's (1979) salutogenic paradigm and sense of coherence will then be introduced as a useful theory through which to examine the relationship between vulnerability and suicidality among AI/ANs. The relationship between sense of coherence and Keyes' (2002) concept of mental health, defined as the presence of positive psychological symptoms, will also be explored and implications of this relationship discussed. Finally, the potential moderating effect of sense of coherence and mental health on the relationship between vulnerability and suicidality will be considered.

Terminology

Importantly, the terms American Indian and Alaska Native can hold several meanings and there are often misunderstandings and misnaming of exactly what these groups include. It is recognized that the majority of AI/AN individuals prefer to be called by their tribal name. However, there are several hundred federally recognized AI/AN tribes. Therefore, for the purpose of this dissertation, American Indian will refer to a member of any indigenous tribe of the United States, alone or in combination with other races, except for those located in Alaska. Alaska Native will be used to include all of the indigenous groups in Alaska, alone or in combination with other races. Additionally, the term Native will be used periodically to refer more broadly to individuals from either population. While these two groups may appear similar

in many respects, however, it is important to acknowledge that they are heterogeneous populations, each with distinct tribes and varying cultural backgrounds.

It is understood that the terms American Indian and Alaska Native are not accepted by all indigenous tribes and that the preferred terminology for indigenous peoples of North America varies by region and age (Walbert, 2009). Therefore, it is important to note why these terms were chosen for use in this dissertation. The terms American Indian and Alaska Native were named by the Indian Nations at Risk Task Force as the preferred terminology when referring to any members or descendants of members of American Indian or Alaska Native tribes (Indian Nations at Risk Task Force, U.S. Department of Education, 1991). It is suggested that these terms are appropriate when the specific tribe of the individual is not known or when a group consists of members of multiple tribes. Importantly, other terms have been introduced throughout history to describe Native populations, however, each has been met with specific criticisms and there has not been consistent agreement regarding a common language to describe all tribe members. For instance, the term Native American came into widespread use during the civil rights era in the United States. However, the term Native American is broad and includes Native Hawaiians and native people of Samoa, in addition to American Indians and Alaska Natives. Additionally, people of many ethnic and racial groups born in the United States consider themselves native Americans. As such, the term Native American does not clearly distinguish between these specific populations and has not been universally adopted (Penn State Commission on Racial/Ethnic Diversity, 1989). The term American Indian has received criticism as well, having been established in the fifteenth century after Columbus mistook America for eastern Asia (Walbert, 2009). However, the AI/AN terms have become widely accepted over time with many preferring their use and self-identifying with these labels (Walbert, 2009).

In an essay on Native terminology, Berry (2009) notes that the terms American Indian and Alaska Native are appropriate for use when the intention of such labels is respectful and accurate. Despite certain criticisms, American Indian and Alaska Native are the most commonly used terms among intertribal organizations and activist groups when describing the broader Native communities. For instance, organizations such as the National Congress of American Indians, the American Indian Movement, the Association on American Indian Affairs, Indian Health Service, Alaska Native Corporations, and Alaska Federation of Natives are all organizations dedicated to the health and wellness of Native communities across the nation. In addition to tribal organizations and activist groups using the AI/AN terms, the federal government has also adopted their use as well. For instance, the government uses AI/AN to refer to groups that have been granted federal recognition and these terms are often found in treaties and other legal documents (Walbert, 2009). Importantly, the majority of data concerning suicide and other health disparities among Native populations is drawn from the U.S. Census, which also uses the AI/AN terms. As such, epidemiologists and social scientists have unfailingly used these terms in their research and reports. The benefit of the AI/AN label is that it allows for a common language to be used by researchers, scientists, and educators when the specific tribal names of those being discussed is unknown. Importantly, participants in the current study did not report their tribal affiliations, therefore, American Indian and Alaska Native (AI/AN) are used in this dissertation to refer broadly to these participants, thus remaining consistent with existing literature in this field.

When conducting research on any minority population it is imperative that multicultural competence be demonstrated. Early research focusing on AI/ANs often portrayed them as primitive and less advanced, exacerbating an already existent system of oppression,

discrimination, and ignorance towards these populations. Due to health disparities faced by AI/ANs, and the invisible nature of their position in U.S. society, it is exceedingly necessary that future research proceed in a way that promotes well-being through culturally appropriate research and intervention. The current dissertation seeks to meet this goal by introducing a model of coping that moves beyond a deficit-based examination of distress and suicidality among AI/AN individuals.

American Indian and Alaska Native Suicide: An Overview

Today, there are approximately 5.2 million AI/ANs in the United States, making up nearly 2% of the total U.S population. The AI/AN population in the U.S. continues to grow and is expected to increase to 8.6 million by 2050, and reach 11.2 million by 2060 (US Census, 2009; US Census, 2014). Importantly, the number of AI/ANs in the United States is increasing at a disproportionately high rate compared to the total population (CDC, 2010). In fact, their rate of growth was nearly triple that of the total population between 2000 and 2010. Currently, the AI/AN population remains underserved and often lacks access to adequate resources and health care. As their numbers increase, so too must the resources and support needed to meet the demands of this unique population. Overall, AI/ANs are a young population with a median age of 30.8. This compares to the median age of 37.5 for the U.S. population as a whole (US Census, 2014). This difference in median age is partially attributable to the disproportionately higher rates of health disparities and lower life expectancy rates of these groups (National Indian Health Board, 2009).

Particularly relevant to the topic of this dissertation is the disproportionately high rate of death by suicide among AI/ANs ages 18-24. American Indian and Alaska Native young people experience the highest rate of suicide of all ethnic groups in the United States, and although

suicide rates vary by tribal community, their average rate is consistently one-and-a-half to two times higher than that of the general U.S. population of young adults in the same age range (CDC Injury Prevention & Control: Data & Statistics (WISQARS), 2013). Some AI/AN communities, however, experience suicide rates that are up to fifteen times higher than the national average (Suicide Prevention Resource Center, 2013). For example, Alaska routinely has one of the highest suicide rates per capita in the country. Each year between 2005 and 2015, Alaska Native men ages 15-24 had the highest rate of suicide among any demographic in the United States, with an average suicide rate of 161.3 per 100,000. This compares to an average rate of 15.6 for the general male population in the same age range during this same decade (Centers for Disease Control and Prevention, Injury Prevention & Control: Data & Statistics (WISQARS), 2015).

The 5.2 million AI/ANs in the U.S. represent 566 federally recognized tribes. These tribes are spread throughout the nation from the most remote and isolated areas to the largest metropolitan cities (US Census, 2014; National Indian Health Board, 2009). There are currently 324 federally recognized reservations across the continental U.S. and over 280 Native villages scattered throughout rural Alaska (US Census, 2014; Alaska Department of Environmental Conservation, 2015). The issue of suicide throughout Indian Country, which includes all land within any Indian reservation, is well documented and continues to be a growing concern. Additionally, despite the limited amount of research focusing on urban-based AI/ANs, initial findings suggest that rates of attempted suicide are similar between those living on reservations and in remote villages as they are for those living in urban areas (Freedenthal & Stiffman, 2004). From 2000 to 2010, the number of AI/ANs living off-reservation grew by 34% (nearly one million people), and today, the overwhelming majority (71%) of these populations reside in

urban areas (Urban Indian Health Institute, 2013). As previously noted, AI/ANs represent a growing proportion of the total U.S. population. Suicide rates among AI/AN young people have remained stable over time, and as these groups continue to grow, attention and research focusing on their health disparities and elevated suicide rates is necessary. As the National Indian Health Board (2009) argues, "Focus on effective prevention for AI/AN communities should be one of the greatest Health Care reform priorities of the 21st century" (p. 7).

Limitations of American Indian and Alaska Native Suicide Research

Epidemiological and risk-based research. American Indian and Alaska Native suicide continues to be a neglected area of research despite the widespread acknowledgement and general sense of urgency to address the issue that exists throughout AI/AN communities. O'Keefe et al. (2014) noted that there have only been approximately 115 published articles focusing on AI/AN suicide since the 1970s. Additionally, a search completed in 2017 using the Academic Search Complete database showed that recent contributions to the field are even more scarce; since 2000, only 27 peer-review articles containing original empirical research have been published. The majority of the existing literature is epidemiological in nature, having focused on the distribution and prevalence of suicide among AI/ANs. However, in more recent years, researchers have identified correlates to suicidal behavior among AI/AN youth and young adults. This includes the identification of potential risk factors that are often present in AI/AN communities. The push to better understand AI/AN suicide has also led to an examination of existing suicide prevention programs, yet few studies have been conducted that introduce empirically validated methods of prevention for these populations.

In 2014, O'Keefe et al. published the first study examining AI/AN suicide through an empirically supported theoretical model of suicide. This study investigated how certain

interpersonal risk factors for suicide, components of Thomas Joiner's (2005) interpersonal theory of suicidal behavior, help explain the elevated suicide rates present in some American Indian communities. The purpose of using an empirically supported theoretical model of suicide to guide research is that it leads to a better understanding of the psychological mechanisms that have a role in suicidal thinking and behavior. This type of research moves beyond the identification of unchangeable risk factors and helps us better understand the malleable variables that may lead to suicidal ideation. Focusing on malleable psychological variables may allow for the development of prevention programs that seek to address how individuals respond (emotionally, cognitively, or behaviorally) to a given vulnerability or risk. For example, O'Keefe et al. (2014) found that burdensomeness significantly predicted suicidal ideation among AI individuals. Feelings of burdensomeness are malleable given the correct intervention; therefore, this type of data may be useful for informing prevention initiatives.

Reservation vs. urban-based studies. Another limitation of the existing AI/AN suicide research is that it overwhelmingly focuses on reservation-based communities. Urban AI/ANs are left out of suicide research for a number of reasons. For instance, they make up a relatively small proportion of the general population and they are geographically dispersed, which prevents adequate sampling (Clark, 2006). Yuan, Bartgis, and Demers (2014) note that urban-based AI/ANs are sometimes referred to as an "invisible minority" (p. 2085) because they are generally overlooked despite their documented health disparities compared with other urban populations. In fact, in a PubMed literature review completed by these authors, less than 3% of published articles focusing on AI/ANs contained data from the urban population (Yuan, Bartgis, Demers, 2014). Even when they are included in larger studies, their data is often collapsed into an "other" category because of their limited representation. As a result, there are few sources of reliable

statistics and accurate prevalence data detailing the experiences of urban AI/ANs remains unavailable (Urban Indian Health Institute, 2004; Clark, 2016).

As previously noted, the vast majority of AI/ANs live in urban areas and, therefore, the existing research focused on reservation suicide may not generalize to a large portion of this population. Census data has demonstrated, however, that urban AI/ANs face alarming disparities in health status and have a disproportionately high prevalence of mental distress compared to the general population (CDC, 2010). Additionally, the Urban Indian Health Institute (2015) has estimated that the prevalence of depression is 30% among urban AI/ANs, but they note that there are limited data to support this. These findings highlight the importance of research that focuses specifically on urban-based populations. Importantly, in one of the first and only studies focusing on urban AI/AN suicide, Freedenthal and Stiffman (2004) found that while urban and reservation-based AI/AN youth attempt suicide at similar rates, their risk factors might vary. These authors encouraged future research to investigate this finding and to explore the unique suicide risk factors that may be present among urban AI/ANs.

American Indian and Alaska Native Suicide Risk Factors

Previous research has well established the dominant presence of several suicide risk factors facing AI/AN individuals. Many of these risk factors are the same as for other populations, such as the experience of mental illness, alcohol use disorders, physical or sexual abuse, access to lethal means, frequent exposure to suicide, and previous suicide attempt(s) (Olson & Wahab, 2006). While these risk factors are not unique to AI/ANs, it has been found that these populations often experience many of them at higher rates compared to the general U.S. population (Beals et al., 2005; Duran et al., 2004; Walters, Simoni, & Evans-Campbell,

2002; Grossman, Milligan, & Deyo, 1991; American Firearms Institution, 2009; Pettingell et al., 2008).

In addition to these universal risk factors, AI/ANs face a host of additional suicide risk factors as well, leaving them even more susceptible to the experience of suicidal thoughts and behaviors. These unique risk factors include the experience of historical trauma, oppression and discrimination, loose social integration and weakened support systems resulting from their socio-historical context (Whitbeck, Adams, Hoyt, & Chen, 2004; Goldston et al., 2008; Strickland, Walsh, & Cooper, 2006; Hill, 2009; Freedenthal & Stiffman, 2007). The following section presents an overview of these risk factors and the ways in which they create vulnerability to suicidality.

Presence of Universal Risk Factors

Mental illness and help-seeking behavior. Approximately 90% of individuals who die by suicide suffer from a mental illness, substance abuse disorder, or both (Goldsmith, Pellmar, Kleinman, & Bunney, 2002). There is currently no definitive assessment of the prevalence of mental illness among all AI/ANs, however, available data from a broad literature search completed by the Urban Indian Health Institute, which included peer reviewed scholarly articles, websites, online documents, and government reports indicates that AI/ANs suffer from disproportionately high rates of depression and psychological distress compared to other ethnic groups (Urban Indian Health Institute, 2012; Substance Abuse and Mental Health Services Administration, 2007; Dinges & Duong-Tran, 1992; Duran et al., 2004). Data collected by the U.S. Census Bureau supports this assertion; for instance, in 2014 AI/ANs were 50% more likely to experience feelings of nervousness or restlessness as compared to non-Hispanic whites, 40% more likely to experience serious psychological distress, and 32% more likely to experience

feelings of worthlessness (U.S. Department of Health and Human Services Office of Minority Health, 2016).

Research focused on more specific AI/AN populations have revealed other startling findings. For instance, it has been found that approximately 22% of all AI/AN juveniles experience PTSD. This matches the rate of PTSD experienced by veterans returning from Iraq and Afghanistan and is triple the rate of the general population (Dorgan et al., 2014). Importantly, there is heightened suicide risk among trauma survivors and research has shown a robust relationship between the experience of PTSD and suicide even after controlling for other comorbid disorders, such as mood and personality disorders (Afifi et al., 2008; Ystgaard, Hestetun, Loeb, & Mehlum, 2004; Sareen, Houlahan, Cox, & Asmundson, 2005). Additionally, in a study done by the State of Alaska Epidemiology department, it was found that mental health issues were the most commonly identified precipitating circumstances for suicide, with 42% of all Alaska Native suicide decedents described as experiencing a depressed mood near the time of their death (Craig & Hull-Jilly, 2012). Depression among AI/ANs has been found to be associated with substance abuse, lack of education, and living in an urban area (Walters, Simoni, & Evans-Campbell, 2002).

Untreated depression is the leading cause of suicide in the United States (National Alliance on Mental Illness, 2009). Despite high rates of depression and distress, AI/ANs are less likely to seek mental health care compared to other populations and they often face several barriers to treatment access as well (Urban Indian Health Institute, 2012). Johnson and Cameron (2001) note that the help seeking behavior of AI/ANs is often influenced by the role of cultural factors and concerns surrounding trust of institutional sources of care. Lack of trust for the dominant Western culture may lead to a lack of trust for mental health professionals. Many

AI/ANs believe that mental health services represent a biased system and culture, which prevents help seeking behavior among AI/AN individuals, especially in urban areas where institutionalized sources of care are residents' only option (Gone, 2004). Adding to their sense of apprehension toward seeking mental health care is the belief that professionals would not understand AI/AN ways (King, 1999). Those who experience depression or suicidal thoughts may never consider seeking treatment from a professional whose culture does not reflect that of their own. As a result, their depression is more likely to be left untreated, leaving them continuously vulnerable to suicidality. The mistrust of institutionalized sources of care may be passed down through generations, thus influencing the attitudes and the help seeking behavior of young AI/ANs.

Barriers to mental health care & limitations of Indian Health Services. The deficiency in health care among AI/ANs remains among the most severe of any group in the U.S. (U.S. Commission on Civil Rights, 2003). Insufficient resources and socioeconomic factors such as poverty, unemployment, housing stability, and transportation often play a role in the disparity of utilization of mental health services among AI/ANs (Urban Indian Health Institute, 2012). Additionally, many AI/ANs rely on the Indian Health Services (IHS) for their health care, yet the limitations of this agency create a significant barrier to accessing mental health treatment when needed. The IHS is an agency within the department of Health and Human Services that provides federal health services to AI/ANs. Those served by IHS are eligible to receive a full range of health care benefits (Johnson & Cameron, 2001). However, the federal government has drastically underfunded IHS programs for many years, and although technically eligible for IHS benefits, members of the federally recognized tribes often go without services (Dorgan, 2010; Hill, 2009). In fact, IHS estimates that Congressional appropriations have consistently met only

52% of the health care needs of AI/ANs (Dorgan, 2010). Less than one-half of uninsured, low-income AI/ANs have access to services provided by IHS, including mental health care (Zuckerman, Haley, Robideaux, & Lillie-Blanton, 2004). Additionally, in 2010, IHS facilities and tribally-run health service agencies combined received 96% of the IHS budget, while urban programs received only 1% (Urban Indian Health Institute, 2012). This discrepancy in funding contributes to the limited access to health services, especially among AI/ANs in urban areas.

Alcohol use. Previous research has found alcohol use disorders are a prominent risk factor for suicidal behavior, as they are often associated with co-morbid psychopathology and negative life events (Ilgen & Kleinberg, 2011). Individuals with an alcohol use disorder are nearly nine times more likely to die by suicide (Wilcox, Conner, & Caine, 2004). Acute alcohol intoxication is also closely associated with suicide as it increases impulsivity, aggressiveness, and psychological distress, at the same time impairing the ability to employ alternate coping strategies (Hufford, 2001). Kaplan et al. (2012) found that 24% of male and 17% of female suicide victims in the U.S. were legally intoxicated at the time of death. In their study examining nearly 58,000 suicide decedents across 16 states, Kaplan et al. (2012) found that the prevalence of acute alcohol intoxication at the time of death was the highest among AI/ANs.

Rates of alcohol use disorders are of striking concern throughout AI/AN communities (Walters, Simoni, & Evans-Campbell, 2002). Findings from the American Indian Service Utilization, Psychiatric Epidemiology, Risk and Protective Factors Project (AI-SUPERPFP), which included interviews with over 3,000 AIs living on or near reservations, indicated that lifetime rates of DSM-III-R alcohol dependence for men was 50% higher than those found in the general population (Spicer et al., 2003). The prevalence of alcohol use is not limited to those living on reservations. For instance, in a 2002, SAMHSA found that for individuals over the age

of 26, the rate of heavy alcohol use was highest among AI/ANs (7.4%) (Clark, 2016). Other drinking prevalence studies have found that urban-based AI/ANs may have even higher alcohol abuse rates than many reservation populations (Walters, Simoni, & Evans-Campbell, 2002). In 2013-2014, 20% of AI/ANs throughout all Urban Indian Health Institute service areas reported engaging in binge drinking compared to 16% of the general population. Importantly, the alcohol-induced death rate among urban AI/ANs was 16.4 per 100,000, significantly higher than the rate of 5.9 in the general population (Urban Indian Health Institute, 2015). Additionally, AIs have been found to use alcohol earlier in life, use it more often and in higher quantities, and experience a higher prevalence of negative alcohol outcomes (including suicide) compared to other racial and ethnic groups (Oetting & Beauvais, 1989; Kaplan et al., 2012). Problem drinking among ANs has been described as an "epidemic" and alcohol abuse was identified as this population's number one health problem. Alcohol abuse among ANs has been associated with higher than average rates of violence, suicidal behavior and death, and death from unintentional injury (Seale, Shellenberger, & Spence, 2012).

Physical and sexual abuse. The experience of physical or sexual abuse can have a devastating impact on one's mental health and well-being. Research has shown a strong association between childhood abuse and subsequent mental health disorders, especially depression and PTSD (Kendler et al., 2000; Campbell, 2002). In fact, it has been found that being a victim of physical or sexual abuse is associated with repeated suicide attempts (Ystgaard, Hestetun, Loeb, & Mehlum, 2004). In addition to increasing one's vulnerability for depression, adolescents who experience childhood physical or sexual abuse are also more likely to be exposed to other suicide risk factors as well, including family instability and substance abuse (Kaplan, Pelcovitz, Salzinger, Mandel, & Weiner, 1997).

Experiences related to suicidal thoughts and attempts among AI/AN young people are often influenced by a family history of physical abuse and violence as well as sexual abuse, especially among females (Grossman, Milligan, & Deyo, 1991). According to the Department of Justice, AI/AN women experience violent victimizations, including aggravated assault, simple assault, and rape two to three times more often than women of any other ethnic group in the U.S. (Greenfield & Smith, 1999). Exposure to this type of violence and abuse is common among AI/AN young people. In a study done by Duran et al. (2004) focusing on child maltreatment and mental disorder outcomes among AI women, it was found that 77% of respondents reported some type of childhood abuse or neglect. Additionally, the National Center on Child Abuse and Neglect (1999) revealed that nearly 80% of AI girls had experienced sexual abuse. Another study focusing on urban-based AI/ANs reported rates of physical abuse as high as 46% (Buchwald et al., 2000). In a study done by the Urban Indian Health Commission (2007), it was found that 16.4 percent of urban AI/AN youth reported being forced to have unwanted sex compared to 6.6 percent of urban white youth. Research has found a strong relationship between physical and sexual abuse among AI/ANs and the lifetime prevalence of mental disorders and suicide attempts (Duran et al., 2004; Buchwald et al., 2000). Williams (2002) notes that exposure to physical and sexual abuse has considerable potential to be perceived as life threatening by those victimized and can leave them with a sense of vulnerability and helplessness.

Access to lethal means. Many suicidal crises are short-lived. Thirty-percent of people surveyed who had seriously considered suicide in the past year reported that their suicidal period lasted under an hour (Drum, Brownson, Denmark, & Smith, 2009)**.** Previous research has also found that the period of time between deciding on suicide and the actual attempt is relatively short, often lasting 10 minutes or less for 24%-74% of attempters (Simon et al., 2001;

Deisenhammer et al., 2009**)**. Having access to lethal means greatly increases one's risk for suicide completion during a suicidal crisis. As such, when one cannot readily obtain a highly lethal method, their suicidal crisis is likely to be non-fatal or they may choose to not attempt suicide at all (Barber & Miller, 2014). The proportion of suicide attempts that result in death, however, are highest when a firearm is used (85%-90%) (Barber & Miller, 2014). Therefore, the lethality of the method that is readily available to a person during a suicidal crisis plays an important role in whether the person survives, or even makes, an attempt.

Availability of a firearm is associated with an increased risk of suicide, both among adults and adolescents (Kellermann et al., 1992; Grossman et al., 2012). American Indian and Alaska Natives may have greater access to lethal means compared to other races. Many AI/ANs are hunters, thus firearms are often present in their homes (Faye, 2005). Between 2000 and 2006, the rate of firearm related suicide among 15-19-year-old Alaska Native males was more than four times higher than the rate among Alaskan White males in the same age group, and more than 10 times higher than White teens in the general U.S. population (Grossman et al., 2012). Additionally, the American Firearms Institution (2009) reported that the firearm suicide rate in the United States is highest among AI/AN individuals ages 15-24. Due to the increased accessibility of firearms among many AI/ANs, these populations are at elevated risk for suicide completion during an acute suicidal crisis.

Previous suicide attempts. One current theory of suicide that is widely researched and accepted is Thomas Joiner's interpersonal theory of suicide (Joiner, Van Order, Witte, & Rudd, 2009). According to this theory, capability for suicide is a marker of risk that can amplify the seriousness of one's suicidal thoughts and desire to die. Experiences that enable individuals to acquire the capability for suicide are those that foster habituation to the pain and fear of self-

inflicted injury to the body. One of the most common means of acquiring capability, according to Joiner (2009), is past suicidal symptoms and suicide attempts. Research focusing on suicide risk factors has well established that a past history of attempted suicide is one of the strongest predictors of future death by suicide (Chang, Gitlin, & Patel, 2011). In fact, those who have previously attempted suicide are at a 30-40 times increased risk of death from suicide compared to the general U.S. population, and it is estimated that approximately 50 percent of people who die by suicide have previously attempted to harm themselves (Harris & Barraclough, 1997; Welton, 2007).

American Indians and Alaska Natives have high rates of suicidal ideation and suicidal behavior, thus leading to habituation of self-injury and pain. Grossman, Milligan, and Deyo (1991) conducted a study investigating risk factors for suicide among AI adolescents with a sample of over seven thousand students in grades 6-12. Results indicated that almost 15% had been suicidal at some point in their lives. In a national analysis of AI/AN high school youth, it was found that 32% of females and 22% of males reported a history of at least one suicide attempt (Pettingell et al., 2008). These numbers are striking and worrisome as a previous suicide attempt is the most powerful form of habituation according to the interpersonal theory of suicide (Joiner, 2009).

Frequent exposure to suicide. American Indian and Alaska Native young people have frequent exposure to suicide due to the number of suicide deaths within their communities (Alcantra & Gone, 2007). Several studies have found that the experience of having a friend or family member who attempted or completed suicide is an important risk factor for suicidal thoughts and behaviors (Grossman, Milligan, & Deyo, 1991; Freedenthal & Stiffman, 2004). In a study completed by Alcantara and Gone (2007), the strongest risk factor associated with a

history of attempted suicide among both male and female respondents was being exposed to a friend or peer suicide. Suicide contagion often perpetuates suicide throughout AI/AN communities. Contagion occurs when a suicide within the community triggers others to attempt or complete suicide, resulting in multiple suicides or attempts within a short period of time (American Foundation for Suicide Prevention, 2013). Goldston et al. (2008) notes that there is growing evidence that AI/AN youth may be at particular risk for suicide contagion, perhaps because of small, intense social networks among adolescents on rural reservations. In one example of cluster suicides among AI youth, seven individuals on one particular reservation completed suicide in a 40-day period (Goldston et al., 2008). Frequent exposure to suicide is a part of life for many AI/ANs due to the high suicide rates among these populations. This type of experience keeps AI/AN youth at heightened risk, and until these communities see a decrease in suicide rates, frequent exposure will continue to be an important risk factor for these individuals.

Presence of Universal Risk Factors: Summary

As overviewed throughout this section, AI/ANs often experience exposure to universal suicide risk factors at higher rates compared to the general U.S. population, thus putting them at higher risk for suicide. It is important to note that AI/ANs are also more likely to be poorer, less educated, less employed, and less healthy than any other demographic group in the U.S. (Gone & Trimble, 2012; Ogunwole, 2006). These conditions are closely associated with the presence of the suicide risk factors described above, and because AI/ANs are "routinely shown to be less well off" (Gone & Trimble, 2012, p. 136), this may help explain why these risk factors are so prevalent among AI/AN groups. In addition to the increased prevalence of universal risk factors, AI/ANs face a host of unique risk factors for suicide as well. The next section will detail these additional risks and how they influence suicide rates among AI/AN populations.

Presence of Additional Risk Factors

Colonization and the termination era. Important contextual elements have impacted the well-being of AI/ANs throughout history, including colonization, historical trauma, loss of connectedness and cultural practices, and a continued experience of oppression and discrimination (Strickland, Walsh, & Cooper, 2006). The heightened prevalence of distress and suicidality among AI/ANs can be better understood through an understanding of this context. For instance, since the time of colonization, traditional cultural practices of AI/ANs have been destroyed and demeaned (Duran & Duran, 1995). Parents and grandparents of today's AI/AN adolescents experienced the Termination Era between 1946 and 1968, in which the government attempted to terminate federal responsibility of AI/AN tribes (Beane, 1989). During this period, AI/ANs were forced to assimilate into the dominant U.S. culture; some were forcibly relocated from reservations to metropolitan cities (Crowfoot Graham, 2002). In some instances, to keep with assimilationist goals, Inupiat children in Alaska were taken from their homes and forced to attend school in other parts of the state and country (Wexler, 2009). Families that were relocated to urban areas were often unable to support themselves, which created dependence on food distribution and other resources by the U.S. government (Goldston et al., 2008). Many AI/ANs experienced poverty, loneliness, and physical and cultural isolation (Yuan, Bartgis, & Demers, 2014). For those who were allowed to stay on the reservations, engaging in traditional religious or spiritual practices was illegal (Goldston et al., 2008). Aspects of traditional Native culture have been protective to AI/AN communities throughout history. However, these communities have had to fight to preserve their worldviews and ways of life (Johnson, 2006).

Loss of cultural values and traditional spirituality. During colonization, there was an attempt to extirpate traditional Native culture from the new world. This included outlawing the

practice of Native religion and spirituality. As the cultural practice of Native communities was abolished, many were forced to adopt an unfamiliar and oppressed way of life in order to survive (Clark, 2006). These experiences have had a negative impact on the well-being of AI/ANs throughout history. A loss of cultural and religious identity has been suggested as an important contributor to the increased suicide rates of AI/ANs (Strickland, Walsh, & Cooper, 2006). Today, engagement in one's tribal culture is often seen as a source of both pride and protection among AI/AN individuals (Johnson, 2006). Cultural values and traditional practices differ among the many AI/AN tribes. However, certain concepts create a foundation common to the general Native culture. For instance, the concepts of harmony and balance are vital to the success and survival of many AI/AN peoples. The medicine wheel, an ancient Native symbol, has often been used to understand the relationships between earth and self. Quadrants on the medicine wheel are often divided and expressed as the four directions (north, south, east, and west); the four elements (fire, earth, air, and water); and the four parts of self (physical, mental, spiritual, and social) (Johnson, 2006).

In a cycle of harmony and balance, death is often viewed as a natural part of life. Some have suggested that this spiritual perspective may contribute to the rate of suicide among AI/ANs by making death an acceptable escape during a period of distress (LaFromboise & Bigfoot, 1988). Research has shown that the relationship between AI/AN spirituality and suicide is more complex than this, however. Traditional religious practice is often viewed as an important component of well-being in Native communities (Johnson, 2006). Despite a cultural acceptance of death, suicide of Native young people is not seen as acceptable by AI/AN communities (Garroutte et al., 2003). In fact, Native elders and Native researchers have consistently underscored the importance of incorporating traditional cultural practices, including focus on

spirituality and balance, in any suicide prevention program targeting AI/AN youth (Johnson, 2006). The importance of spirituality as a protective factor has been demonstrated throughout research (Garroutte et al., 2003). For instance, Garroutte et al. (2003) found that a commitment to cultural spirituality was significantly associated with a reduction in attempted suicide among reservation-based American Indians.

Consequences of the socio-historical context. The genocide, colonization, and marginalization that have plagued AI/AN peoples throughout history have altered and disrupted important tribal characteristics and ways of life among these populations. Although cultural diversity exists between tribes, several common characteristics of suicide have been identified throughout AI/AN communities. For instance, in a study done by Novins, Beals, Roberts, and Manson (1999), it was noted that the correlates of suicidal ideation differed between tribes but were consistent with the tribe's social structure and support systems.

Impact on tribal social structure. Research has pointed to the disruption of connectedness and tribal unity as a risk factor for suicide among AI/ANs (Hill, 2009). Acculturation has led to a disruption of tribal unity and has created a challenge to the traditional ways of life, values, and relational systems (Johnson & Tomren, 1999). For instance, Hill (2009) asserts that traditional cultural buffers, including connectedness to family and cultural resources, which protect against suicidal ideation and behaviors, have been weakened over time as a result of socio-historical events. This has led to deterioration in parental and community influences and a loss of native language. Hill (2009) suggests that this type of social change undermines a tribe's sense of connectedness and increases the risk for suicide among young people. May (1987) also notes that tribes with loose social integration or connectedness, which emphasize a higher degree of individuality, have higher suicide rates than those with tight integration that

emphasize conformity. This type of loose social integration is characteristic of many AI/ANs living in urban areas, as more Western ideals and values are present in their daily lives and they are less likely to be surrounded by a connected Native community. According to Olson and Wahab (2006), in less traditional tribes, where pressures to acculturate have been great and tribal conflict exists concerning traditional cultural practices, the suicide rate in the adolescent and young adult population is high. The loose social integration that is becoming increasingly more common is fueled by competing worldviews that the young people of these communities must navigate and live by.

American Indian and Alaska Native youth hold ideas about themselves, their families and communities, and their future, which are negatively affected by the misalignment between tribal characteristics and Western expectations and values. Western understandings have become the standard in many of these communities and young people believe they have to follow these standards to achieve success. This is problematic because unlike a Western worldview that emphasizes the importance of individual responsibility, it is the tradition of many AI/AN tribes to emphasize an awareness of others and the broader contexts in which people act (Wexler, 2009). The differences between these two worldviews often leaves young people feeling confused, and as Wexler (2009) suggests, they often blame their own people for failing to achieve Western standards, which assert that individuals should have control of their own lives. American Indian and Alaska Native youth often struggle to achieve the Western ideal of individual responsibility and choice while living within a traditional culture of shared destiny. In a qualitative study done by Wexler (2009), several Alaskan Inupiat youth stated they have two choices: to either give up and fail, or to hold onto the idea that they can work hard, make good choices and succeed. Making their own choices, however, is difficult because it is unacceptable

to depart from traditional practices and community norms. Wexler (2009) notes that because of the struggle between these two competing worldviews, young people often feel hopeless about their future.

Impact on support systems. As a result of the socio-historical context, weakened support systems have become more common throughout AI/AN communities. Similar to the social structure previously described, support systems, including immediate and extended family, have become more fragmented over time (LaFromboise & Lewis, 2008). Hopelessness, which is strongly linked to suicidal ideation and behavior, is often related to family dysfunction and family instability. Family dysfunction and instability often stems from family violence, sexual abuse, alcohol, divorce, and poverty (Strickland, Walsh, & Cooper, 2006). In a study completed by Dinges and Duong (1992) it was found that parental conflict was related to youth suicide among AI/ANs. American Indians and Alaska Natives from families with absent fathers or who lived in a home without both biological parents were also at risk (Gartell, Jarvis, & Derksen, 1993; Novins et al., 1999). This type of weakened household structure has become more common in these communities over the last several decades. This can be explained in part due to an increase in dispersed housing subdivisions and a decrease in extended family dwellings. The new housing patterns found in reservations and urban areas throughout the country have adversely affected the value of the extended family as a social, emotional, cultural, and economic support system (LaFromboise & Lewis, 2008). As a result, those individuals who lack a strong network of support are more likely to experience a failed sense of belongingness, which is often a powerful motive for suicide (Joiner, Van Orden, Witte, & Rudd, 2009).

Sense of belonging is a multidimensional construct that reflects the psychological, sociological, physical, and spiritual connections of individuals, families, or communities. A

sense of belonging in AI/AN tribes is often a deep spiritual connection to family, community, nature, and traditional ways of life. Hill (2009) describes this sense of belonging and connectedness as the fundamental focal point of AI culture. A sense of belonging and integration of an individual to their community or social group has an inverse relationship to suicide (Middlebrook, LeMaster, Beals, Novins, & Manson, 2001). Findings from a study on AN suicide showed belongingness was the most frequently cited reason given in interviews about why an individual had completed suicide (Sanddal, 2011). Joiner (2005) notes that of all the various risk factors for suicidal behavior, the clearest overall support has emerged for indicators of social isolation, as those who are socially isolated are likely to feel a lack of belonging.

Research has shown that AI/ANs who have completed suicide were more likely than other ethnic groups to feel a sense of alienation or social isolation (Olson, Wahab, Thompson, & Durrant, 2011; Grossman, Milligan, & Deyo, 1991). In their study, Olson, Wahab, Thompson, and Durrant (2011) found that the motivation to complete suicide among AIs was often due to emotional isolation from society, friends, family, and intimate partner relationships. Suicide notes of AI/AN adolescents conveyed their alienation by stating that their family members did not know them well enough to recognize or help them with their problems. For example, a young AI female wrote "I am sorry you had to find out that I hated my life so much it drove me to killing myself" (p. 1488).

Historical trauma, oppression, and discrimination. The colonization of America, including the genocide of Native people and the destruction of their culture, created a multigenerational trauma cycle that induced states of imbalance and disharmony, ultimately manifesting in a fractured sense of culture and identity as well as a sense of distrust of the U.S. government (Whitbeck, Adams, Hoyt, & Chen, 2004). The sense of intergenerational trauma

persists today, with reminders including reservation living, discrimination, and loss of cultural values and traditions, all of which are associated with feelings of demoralization and hopelessness (Whitbeck, Adams, Hoyt, & Chen, 2004). Research has found that a significant portion of AI/ANs have persistent thoughts of historical losses and that these thoughts are associated with emotional responses such as sadness, depression, and anger (Whitbeck, Adams, Hoyt, & Chen, 2004; Whitbeck, Walls, Johnson, Morrisseau, & McDougall, 2009).

Importantly, historical loss is not all that AI/ANs have to contend with. These populations experience frequent discrimination and oppression in today's society (Clark, 2006). In a study done by Yoder, Whitbeck, Hoyt, and LaFromboise (2006), it was found that perceived discrimination was a potent stressor in the lives of AI youth and was a strong predictor of depression and suicidal ideation. Perceived discrimination and oppression may interfere with establishment of one's identity by introducing confusion regarding self-worth and self-concept; this may lead to serious emotional and behavioral consequences for young people (Olson & Wahab, 2006; Whitbeck, Hoyt, McMorris, Chen, & Stubben, 2001). This assertion is supported by results of a study done by Whitbeck et al. (2001) who found that adolescents respond to discrimination by internalizing symptoms. These authors also found that perceived discrimination was linked to anger and delinquent behaviors, which in turn, were strongly related to substance abuse; another strong predictor of suicide risk among AI/ANs.

Ethnic identity development. As previously noted, the historical trauma and discrimination faced by AI/ANs has the potential to negatively impact the development of one's self-concept and feelings of self-worth, thus impacting emotional responses and behavior (Olson & Wahab, 2006). Cognitive distortions that lead to a depressive emotional response and suicidal behaviors are often created by a negative self-concept. Ethnic identity is an important component

of self-concept that is found to influence one's internal views of the self (Moilanen, 1995). Existing literature provides evidence of the protective nature of ethnic identity among AI/ANs. For instance, Whitbeck et al. (2001) suggest that connection to Native heritage and a strong indigenous identity can be a source of resilience and contribute to well-being. However, the development of ethnic identity among AI/ANs is impacted by the context in which these groups live. Similar to other ethnic minority groups, AI/ANs must navigate the competing worldviews of their culture of origin and mainstream society. Their ethnic identity is often rooted in connection to their tribal affiliation, which includes their Native values, beliefs, and ways of living (Kulis, Wagaman, Tso, & Brown, 2013). Importantly, pressure to acculturate and experiences of discrimination may leave urban AI/AN youth with negative feelings about their Native heritage and internalized negative views of themselves. Traditional AI/AN practices become difficult to preserve and maintain as these groups are forced to operate in social settings where Native cultural traditions are not regularly practiced or accepted (Kulis et al., 2013). The current lived experiences of urban-based AI/ANs may contribute to a weakened ethnic identity through the inhibition of enculturation, thereby leaving AI/AN young people more susceptible to hopelessness, depression, and suicidality.

Presence of Additional Risk Factors: Summary

American Indians and Alaska Natives are faced with important risk factors for suicide that are influenced by a unique historical and cultural context. Understanding AI/AN suicidality through this context helps to validate the unique experiences of these individuals. The additional risk factors described in the previous section are firmly grounded in history and are perpetuated by the continued oppression and discrimination of AI/ANs today. Although nothing can be done

to change the historical experiences of AI/ANs in the United States, it is imperative that we recognize and acknowledge such experiences so as to combat their perpetuation.

Limitations of Risk-Based Research

As demonstrated thus far, the majority of research that focuses on AI/AN suicide is epidemiological in nature and has prioritized the identification of risk factors among these populations. While the identification of risk factors is an important component of suicide research and prevention, focusing solely on this type of research limits our understanding of the suicidal experience. For instance, previous research has established that an undeveloped ethnic identity and consistent thoughts of historical losses may contribute to negative beliefs about the self and lead to feelings of hopelessness and suicidality (Kulis et al., 2013; Olson & Wahab, 2006). Additionally, AI/ANs are less well-off compared to other racial groups in the United States; they experience higher rates of poverty and an increased prevalence of common suicide risk factors such as alcohol abuse and mental illness (Olson & Wahab, 2006). Importantly, however, this research provides no information on how to address these risk factors or protect against their outcomes among the general AI/AN population or among specific tribal groups.

American Indian and Alaska Native tribes are commonly misperceived as one homogeneous population; however, it is important to remember that there is marked diversity among these groups. For instance, the 566 federally recognized tribes speak over 220 indigenous languages and represent broad cultural heterogeneity (Alcantara & Gone, 2007). As a result, suicide risk factors for AI/AN youth have been shown to vary across tribal groups and tribal location (Novins, Beals, Roberts, & Manson, 1999; Freedenthal & Stiffman, 2004). For instance, Novins, Beals, Roberts, and Manson (1999) found that there was no common correlate to suicidal ideation among adolescents from three different AI tribes. The cultural heterogeneity of

the various AI/AN tribes presents a major limitation in risk-based research on suicidal ideation and behavior among these groups. What serves as a strong risk and predictor of suicidal ideation among one AI/AN tribe may have little or no relation to suicidal behavior among another. Therefore, suicide prevention and screening programs focusing on identification of risk factors may be difficult to adapt from one tribe to another (Novins, Beals, Roberts, & Manson, 1999).

Exploring Trends in Urban AI/ANs

Generalizing results from previous studies is especially problematic when done with urban AI/ANs, as they represent a unique subset of the larger Native population. For instance, urban AI/AN young people are more likely to be multiracial and may be less likely to adhere to traditional Native ways of life, as such, their risk and protective factors may be different (CDC, 2010). Unfortunately, risk factors associated with suicide among urban AI/ANs have not been well established through previous research efforts. However, United States Census data shows that urban AI/ANs experience heightened exposure to common suicide risk factors associated with the general population. Trends in suicide differ among AI/ANs as compared to the general population, however, including the age at which suicidal risk peaks. Therefore, exposure to common suicide risk factors may differentially impact the development of suicidality among this population.

Urban-based AI/AN college students. Suicide is most prevalent among young adults in the AI/AN population. More specifically, college-aged AI/ANs experience the highest suicide rate of any demographic group in the United States. However, research focusing on suicidality among this particular age group of the urban population is extremely limited, and to date, there have been only two empirical studies examining suicidality among AI/AN college students (O'Keefe et al., 2013 & O'Keefe et al., 2014). Both of these studies recruited AI/AN college

students from the Midwest region of the United States. Additionally, the suicidal experience of AI/AN participants was not described nor compared to students of other racial groups. Instead, other mediating variables were explored in their relationship to suicidal ideation. While this type of research is the first of its kind, and is vital in progressing this field of study, more research is needed to establish trends in suicidal ideation and attempts among AI/AN college students, and comparisons should be made to participants of other races in order to gain a better understanding of disparities that may exist.

The mental health concerns of college students have attracted national attention as recent generations of adolescents experience increased anxiety, depression, and suicidal ideation in the face of a changing cultural landscape. For instance, more teenagers are being raised with high expectations for their academic performance and ultimate career success (Iarovici, 2015). Rates of teen depression and suicide have experienced a dramatic increase since 2011, and as a result, more students are entering college with pre-existing mental health issues (Twenge, 2017). Suicide has been the second leading cause of death among college student since the 1950s. Importantly, ballooning rates of college attendance are likely to produce higher numbers of students who experience suicidal ideation and who ultimately die as a result of causes that are, in most cases, treatable (Iarovici, 2015).

As the AI/AN population continues to grow at disproportionately fast rates, the number of AI/AN college students will also increase. Currently, AI/AN students account for 1% of the total enrollment in colleges and universities. However, their enrollment rates have doubled in the last 30 years (National Center for Education Statistics, 2008). As such, it is important for research to focus on this population of students as their suicide risk and protective factors may vary compared to the general student population and other ethnically diverse groups. Barriers to

adequate sampling have prevented research from focusing on this age group of urban AI/ANs even though they experience particularly high suicidal risk. However, examining suicidality among AI/AN college students provides a solution to the sampling challenge and an opportunity to gain important insight into the experiences of AI/AN young adults, including what protective factors help prevent suicide among these individuals.

Moving Toward an Understanding of Successful Coping

There is no single cause that one can identify in the development of suicidal thinking, unlike other diseases one might strive to prevent or treat (Drum & Burton Denmark, 2011). This presents a unique challenge to those who view suicide from an epidemiological or risk-based perspective. Identifying those who are at risk for suicide by the presence of various unchangeable risk factors and previous life events fails to aid in a more in-depth understanding of the suicidal phenomenon among AI/AN individuals. For instance, examining the prevalence of risk factors does little to guide our conceptualization of why higher rates of AI/AN individuals react to vulnerability with psychological distress and suicidal ideation compared to other groups. Additionally, focusing solely on the identification of risk factors limits our understanding of what helps people cope successfully with stressful experiences.

Identifying the presence of vulnerability factors and their association with suicidal behavior is just the first step in understanding elevated rates of suicide among AI/AN young people. The next step seems to be investigating how these vulnerabilities affect a person and then determining how to intervene along that pathway. To do so, obtaining a more complete understanding of one's experience of distress is imperative. It is important to note that not all individuals who possess risk attempt suicide. In fact, the majority of people who face stressful experiences or negative life events never consider suicide or develop a psychological disorder

(Drum & Brownson, 2014). Therefore, it would be useful to investigate what differentiates those who do, from those who do not. Examining the ways in which people do cope successfully with vulnerability and negative life events may assist in identifying what mechanisms inhibit suicidal thinking. This information can then be used to shift the focus of intervention to increasing the protective qualities among AI/AN young people. This type of intervention works to address changeable psychological factors in the face of unchangeable risk factors and vulnerabilities, thus decreasing the likelihood of severe suicidal ideation and suicidal behaviors.

The Salutogenic Paradigm and Sense of Coherence

As previously noted, the majority of individuals who confront negative life experiences do not consider suicide or develop a psychological disorder. However, a focus on successful coping and the protective mechanisms that keep people from developing depression, suicidal thinking, or attempting suicide is largely absent from the literature (Drum & Brownson, 2014). Recently, however, there has been a call to broaden the scope of treatment and prevention by targeting the general population rather than just those who have been diagnosed with a disorder (National Research Council and Institute of Medicine, 2009). Health has been re-defined as "not just the absence of disease, but also the presence of well-being and resiliency" (Drum & Brownson, 2014, p.5). As such, mental health promotion should emphasize strengthening well-being and enhancing protective factors and successful coping in at-risk populations.

Viewing health on a continuum. Aaron Antonovsky (1979) introduced a salutogenic paradigm, which argues that focusing on the origin of health (salutogenesis), rather than the origin of disease (pathogenesis), allows for a better understanding of why some individuals develop disease while others do not. Antonovsky (1979) suggests that health be viewed on a continuum, rather than a health-disease dichotomy. Focusing solely on disease, he argues, leaves

us blind to the factors that promote well-being and adaptive coping. Instead, Antonovsky advocated for ongoing research into what factors are involved in remaining at, or moving toward, the healthy end of the continuum, towards physical and emotional well-being.

A central hypothesis of Antonovsky's (1979) salutogenic model is that the tension created by stressful life events has the potential to generate growth within an individual, particularly if they have access to several "generalized resistance resources." Antonovsky defined generalized resistance resources as internal or external resources that are either currently or potentially available to an individual. These resources include things such as ego strength, wealth, and social support, and they have the potential to promote health and well-being. The availability of generalized resistance resources is determined not only by an individual's personality-shaping experiences, but also by social class and societal and historical conditions. Antonovsky (1979) suggested that the generalized resistance resources available to an individual would ultimately influence patterns of experience that determine one's location on the health continuum.

Sense of coherence. In his search for a theoretical explanation of how generalized resistance resources, such as social supports or a strong ego identity, are linked to health, Antonovsky (1987) developed the concept of sense of coherence. He introduced sense of coherence as an overarching quality of self, generated by the existence and utilization of generalized resistance resources. Antonovsky (1987) defines sense of coherence as a way of perceiving one's relationship to the world—whether the world is thought of as comprehensible, manageable, and meaningful.

The first component of sense of coherence, comprehensibility, refers to the degree to which one views their surrounding environment as understandable and organized. Antonovsky

(1987) theorized that comprehensibility is brought about by consistent life experiences. The second component, manageability, refers to whether one believes they have the ability and necessary resources to successfully face life's challenges. One's perception of manageability is thought to develop as a result of their balance in life. The last component, meaningfulness, refers to one's belief that life's challenges are worthy of investment and engagement. Participation in shaping outcomes and feeling socially valued provide the basis for the development of meaningfulness. The three components of sense of coherence (comprehensibility, manageability, and meaningfulness) each represent a separate theoretical construct. However, all three are thought to be strongly related and, taken together, lead to an overall feeling of confidence in the self (Antonovsky, 1993). Antonovsky suggests that sense of coherence develops through childhood up to young adulthood and typically remains stable throughout life. However, he notes that one's level of sense of coherence has the potential to change through major life events or intervention. Importantly, Browman (1997) concluded that different cultural pathways lead to the development of sense of coherence among people from different ethnic groups. Therefore, sense of coherence offers cultural flexibility in terms of intervention design and implementation.

Antonovsky (1987) describes sense of coherence as a quality of the self that one possesses and is psychologically impacted by regardless of situation or time. Sense of coherence represents the degree to which an individual views the world and his or her life circumstances as coherent; it is a subjective orientation toward life that may support constructive responses to life's challenges (Albino et al., 2015). For instance, rather than viewing the construct as a coping style, Antonovsky (1987) states that a strong sense of coherence will result in the choosing of the most adaptive coping style given the situation at hand. Therefore, sense of coherence will impact an individual's placement on the health continuum and helps explain why some people remain

healthy despite the presence of certain risk factors. Sense of coherence shares commonalities with several protective factors and has been shown to correlate positively with related constructs, including self-esteem, self-efficacy, and locus of control (Antonovsky, 1993; Kröninger-Jungaberle & Grevenstein, 2013).

Sense of coherence as a protective quality. Previous research has established that sense of coherence can protect against both mental and physical illness. For instance, a strong sense of coherence has been associated with high levels of psychological well-being and life satisfaction and has been found to be negatively correlated with various psychiatric diagnoses, including major depression and substance use disorders (Kröninger-Jungaberle & Grevenstein, 2013; Langeland, Wahl, Kristoffersen, Nortvedt, & Hanestad, 2007; Ristkari et al., 2005; Carstens & Spangenberg, 1997). Research indicates that sense of coherence may also have a strong protective effect against the development of suicidality. For instance, several studies examining both clinical and non-clinical populations have found that a strong sense of coherence can buffer against the prevalence of both lifetime and recent suicidal ideation and attempts (Edwards & Holden, 2001; Mehlum, 1998; Petrie & Brook, 1992; Ristkari et al., 2005; Sjöström et al., 2012). Importantly, sense of coherence has been found to better explain the variance in suicidal ideation than other well-known risk factors, such as hopelessness, self-esteem, and depression (Petrie & Brook, 1992).

The Mental Health Continuum and Sense of Coherence

Antonovsky's (1979) concept of a salutogenesis— focusing on the origin of health rather than the origin of disease—has recently picked up traction as the paradigm for health care in the United States slowly begins to shift. Throughout history, a pathogenic approach to physical and mental health research and practice has prevailed. This approach focuses on reducing the

prevalence of illness through prevention among those at risk or by successfully treating afflicted individuals (Keyes, 2007). However, the World Health Organization (WHO) acknowledges that using this type of approach to promote population health is costly and ineffective. As such, in 2001 the WHO published a report that conceptualized mental health as "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (World Health Organization, 2001, p. 1). The WHO notes that in this sense, "mental health is the foundation for well-being and effective functioning for an individual and for a community" (World Health Organization, 2004, p.10); they go on to argue in a 2004 report on mental health promotion for a shift in health research and practice from a pathogenic to a salutogenic paradigm.

Keyes (2002), acknowledging a call to shift the mental health paradigm, introduced an "operationalization of mental health" (p.1) as positive feelings and positive functioning in life. Similar to Antonovsky's (1979) concept of sense of coherence, Keyes' (2002) conceptualization of mental health varies along a continuum, ranging from flourishing (the presence of mental health) to languishing (the absence of mental health). Also like sense of coherence, Keyes' (2007) construct of mental health consists of three components; hedonic well-being (positive emotions), positive psychological functioning, and positive social functioning. The three components of sense of coherence (comprehensibility, manageability, and meaning in life) are similar in nature to the components of mental health, as described in more detail below. Both sense of coherence and mental health, as defined by Keyes (2002) and Antonovsky (1979), represent a sense-of-self construct that impacts level of functioning. Sense-of-self may be defined as the way people view themselves in relationship to self, others, and the world. It is a

function of their experiences, plays a role in their coping, and operates on both their psychological and physical health. Keyes' (2002) concept of mental health can be used in conjunction with sense of coherence to further validate the protective nature of a positive sense-of-self. Additionally, if found to be protective among AI/ANs, the components and domains of mental health—in conjunction with the components of sense of coherence—can be used to guide points of intervention in order to foster a positive sense-of-self among individuals and populations.

Components of mental health. Keyes (2002) operationalized a state of mental health as positive symptoms of an individual's subjective well-being. He further defined well-being as the perceptions and evaluations a person makes of their own lives in terms of their affective states and their social and psychological functioning. Like sense of coherence, these perceptions and evaluations lend to an individual's subjective orientation toward life. Assessing for well-being or mental health requires measurement of the presence and absence of positive functioning in life. Specifically, Keyes (2007) describes three components to mental health, each consisting of multiple dimensions found to contribute to positive functioning, well-being, and placement on the flourishing end of the mental health continuum. Utilizing Keyes' (2002) Mental Health Continuum (MHC), it is possible to assess and measure each of these following components.

The first component of Keyes' (2002) concept of mental health is positive emotions (i.e. emotional well-being). To achieve a flourishing state of mental health along the Mental Health Continuum, one must endorse items related to the presence of positive emotions. The positive emotions (i.e. emotional well-being) component of mental health is comprised of positive affect and an avowed quality of life. These characteristics include feelings of happiness and being mostly satisfied with life overall or in domains of life. The second component of mental health

includes dimensions of positive psychological functioning (i.e. psychological well-being). Self-acceptance, personal growth, purpose in life, environmental mastery, and autonomy are dimensions of psychological well-being that represent positive functioning. The third component of mental health includes several dimensions of social functioning. Keyes (2002) notes that there is more to well-being than psychological and emotional health. He argues that positive functioning must also include social well-being, as the social criteria that people use to evaluate themselves and their satisfaction with life is of great importance. Additionally, Keyes (2002) emphasizes the importance of having warm and trusting relationships and describes this as necessary for individuals' psychological health. The dimensions of social well-being on the Mental Health Continuum include social coherence, social actualization, social integration, social acceptance, and social contribution. Similar to Antonovsky's (1979) conceptualization of well-being, Keyes (2002) also suggests that individuals experience mental health when they view society and the world in which they live as meaningful and understandable and are able to shape their environments to meet their needs; when they have direction in life and see opportunity for potential growth and contribution; and when they have a sense of belonging in their communities. Together, these dimensions of mental health represent symptoms of a more global sense of well-being. Use of the Mental Health Continuum provides a measure of total well-being, while also allowing for deeper exploration into the described dimensions of mental health.

Mental health as a protective quality. Each dimension of mental health is measured using the Mental Health Continuum. Scores from each dimension are summed to represent a total state of mental health, placing respondents at a point along the mental health continuum. In addition to continuous and dimension scoring methods, a specific formula can be used to determine a person's placement between flourishing and languishing mental health.

Previous research has shown that possessing a flourishing state of mental health is protective in nature. For instance, in a study completed by Keyes (2002), it was found that adults with flourishing mental health were approximately two times less likely to have had major depression during the past year compared to moderately well adults, and nearly six times less likely to have had major depression than those with languishing mental health. Furthermore, 81% of adults who met criteria for flourishing mental health self-reported that their emotional health was "very good" or "excellent," compared to 61% with moderate mental health, and 15% with languishing mental health. Additionally, measures of mental illness have been found to negatively correlate with measures of subjective well-being (Ryff & Keyes, 1995). This finding lends support to Keyes' concept of mental health in that those with a higher sense of subjective well-being often experience less mental illness. Flourishing mental health has also shown to be protective in a broader sense as well. For instance, Keyes and Simoes (2012) examined the influence of mental health on all-cause mortality rates among a longitudinal sample of over 3,000 adults. In this study, it was found that the absence of positive mental health significantly increased the probability for all-cause mortality for men and women at all ages after adjustment for known causes of death.

As previously stated, Keyes' (2002) concept of mental health represents a sense-of-self construct similar to Antonovsky's (1979) sense of coherence. Both mental health and sense of coherence describe an individual's orientation to the world around them. Importantly, Antonovsky (1987) discusses in depth the importance of resources that promote or thwart the development of sense of coherence among individuals. Additionally, his intention to develop a construct and scale that measures sense-of-self and well-being across culturally diverse groups has important implications for the use of sense of coherence in research and intervention. For

instance, the significance of sense of coherence and its protective nature has been found across more than thirty countries and among dozens of culturally diverse populations. It is suggested that the generalized resistance resources that promote sense of coherence may vary among these populations due to cultural and societal factors, and this is imperative to consider when designing prevention programming. Keyes' (2002) construct of mental health provides an additional measure of sense-of-self and well-being broken down into clear dimensions related to emotional, psychological, and social functioning. Similar to sense of coherence, the components of mental health, as measured by the Mental Health Continuum, have shown clear protective qualities and can aid in the understanding of what factors promote well-being and keep people emotionally healthy. As such, Keyes' (2002) Mental Health Continuum can be used to supplement the measurement of the more global sense of coherence construct, and can provide additional guidance on what factors are important for consideration in prevention programming.

The Distress and Suicidality Continuum

Currently, the majority of mental health practitioners who practice suicide intervention focus on the acute end of the suicidal spectrum, often utilizing hospitalization and other resource-intensive prevention efforts during an individual's intense, but often brief, suicidal crisis (Drum et al., 2009). Ideally, however, individuals who are at risk of experiencing such a crisis would be reached before the onset of acute symptoms. Increasingly, suicide is being understood as a complex and multifaceted health issue. Each person who contemplates suicide faces unique circumstances and life experiences. Therefore, instead of trying to identify the cause of suicidal thinking, it may be more beneficial to understand the development and progression of suicidal thoughts so that intervention may take place before an individual reaches a period of acute suicidal crisis. To do this, mental health practitioners must acknowledge the

range of thoughts, feelings, and behaviors that characterize an individual's experience prior to reaching an acute phase of suicidality.

There are currently several measures available that assess for pre-acute suicidal thoughts. However, many of these scales are used in a way that excludes non-suicidal individuals from further assessment, focusing instead on those who are on the acute end of the spectrum (Beck, Kovacs, & Weissman, 1991). These scales are often used to identify those in crisis so that immediate intervention may take place. Focusing on the acute end of the suicidal spectrum limits our understanding of how pre-suicidal and passive suicidal thoughts might progress into more severe suicidal thinking and behavior. This is problematic as individuals with passive suicidal ideation are likely to progress to the more severe end of the spectrum if they do not receive appropriate care.

In response to this limitation, Drum et al. (2009) proposed a measure of distress and suicidality that is sensitive to a range of thoughts that an individual might experience including pre-, passive, and active suicidal thoughts that fall along a progressive continuum. Thoughts along the continuum range in severity from "this is all just too much" to "I will kill myself." The Distress and Suicidality Continuum scale asks respondents to select all thoughts that apply to them in order to indicate the presence of distressing or suicidal thoughts and their placement along the continuum. Validation of the scale has shown that as respondents progress along the continuum of stressful thoughts, they also progress in the severity of suicidal thoughts and behaviors. For instance, respondents who had the thought "I will kill myself," indicating a position at the acute end of the suicidal continuum, were also more likely to report having made a suicide attempt (Drum & Brownson, 2014). Allowing an individual to endorse a variety of thoughts reflective of their experience benefits both researchers and practitioners by deepening

the understanding of how suicidal thinking progresses and identifying earlier points of intervention. More specifically, using this tool allows researchers to examine various factors that result in either the progression of suicidal thinking, or protection from progression, given similar vulnerability and risk.

Summary

Despite a general outcry to address the suicide disparities faced by AI/AN communities, research focusing on this topic remains limited, often failing to move beyond descriptive and epidemiological analyses. Importantly, literature focusing on suicide among urban AI/ANs is especially scarce, however, 71% live in metropolitan areas. Instead, findings from reservation-based studies are often generalized to this unique subset of the population. Several factors make it challenging to focus specifically on those AI/ANs in urban areas, for instance, they represent a relatively small proportion of the general population and they are geographically dispersed. However, the number of AI/ANs in the U.S. has been increasing at a rate that is three times as fast as the rate of the general population. As such, the needs of AI/AN communities will continue to increase. Importantly, the suicide rate among AI/ANs is highest among college-aged individuals. As such, it might be expected that urban AI/AN college students may experience heightened suicide risk compared to students of other ethnicities. Currently, however, there are no studies that have examined suicide among AI/AN college students despite a national focus on college-student suicide prevention.

The limited foundation of existing research on AI/AN suicide presents an important opportunity to begin exploring these issues through a theoretical perspective in order to provide unique insight and ultimately inform efforts to foster health and well-being among urban AI/ANs. In order to understand what contributes to successful coping despite vulnerability, we

must develop a deeper understanding of how one progresses from distress to suicidal thinking and then examine the protective mechanisms that inhibit this progression. As such, the current study seeks to add to the existing literature on the relationship between vulnerability and suicidality by assessing whether sense of coherence and positive mental health protect against the development of suicidal thoughts in the face of unchangeable risk factors among AI/AN college students; a population who has yet to be considered in suicide research. More specifically, this study seeks to examine how personal resources may ameliorate suicidal risk within this population. Examining the way in which sense of coherence and positive mental health protect against vulnerabilities facing AI/AN populations will provide new insight into how interventions can be used to promote adaptive coping rather than merely identifying those at risk.

Chapter 3: Methodology

Due to the absence of literature focusing on urban-based AI/AN suicide, the aims of this study were to establish and describe the presence of vulnerability, suicidality, sense of coherence, and mental health, as well as the relationships between these variables, among this understudied group. As previously noted, the majority of AI/ANs currently reside in urban areas, yet research has failed to adequately examine the health disparities that are known to exist among this subset of the larger AI/AN population. More specifically, the risk factors to suicidal behavior among urban-based AI/ANs have not yet been identified through empirical investigation and are instead generalized from studies on reservation-based populations. As such, the first four research questions begin this investigation by developing a better sense of this descriptive information and how it compares to other urban-based racial groups as well as rural-based AI/ANs. The remaining research questions seek to move beyond a deficit-based approach by exploring the relationships between study variables, including the protective nature of sense of coherence and mental health on the relationship between acquired vulnerability and distress and suicidality. The following chapter begins with a description of the methods used to acquire study data, including participant selection, data collection procedures, and measurement selection and validation. This chapter ends with a detailed overview of research questions and hypotheses.

Approval by Human Subject Committee

This dissertation followed guidelines and standards established by the Institutional Review Board for the Protection of Human Subjects at The University of Texas at Austin and all other participating universities from which the sample was drawn.

Data Set

The current study was completed in conjunction with a larger study conducted by the National Research Consortium of Counseling Centers in Higher Education, which is housed at the Counseling and Mental Health Center at The University of Texas at Austin. This larger study, titled "Understanding Student Distress and Academic Success," launched in spring 2016. As part of this study, the Research Consortium collected a large stratified random sample of undergraduate and graduate students from four-year colleges and universities throughout the United States. Eighteen institutions participated in data collection on behalf of the Research Consortium, thus allowing for collection of approximately 12,000 completed surveys from currently enrolled university students. The current dissertation study achieved participants through this sample.

Participant response rates were approximately 31% for both undergraduate and graduate students. The demographic makeup of participants closely reflects the current national makeup of students at four-year colleges as well as the demographic makeup of participants in other large-scale national college health surveys (American College Health Association, 2014; Drum et al., 2009). The percentage of respondents who identified as American Indian or Alaska Native (alone or in combination with other races) was approximately 2% of the total sample (229 AI/AN respondents).

Procedures

Each participating university was asked to provide the e-mail addresses and names of a randomly selected subgroup of currently enrolled full-time students over the age of 18. Subgroups were stratified by undergraduate and graduate status. The number of students sampled per school was based on school size. For example, the entire undergraduate class was sampled

for institutions with fewer than 500 undergraduates; 500 undergraduates were sampled from institutions that had between 500 and 4,999 undergraduates; and 1,000 undergraduates were sampled for institutions with 5,000 or more undergraduates. Similar sampling guidelines were followed with regards to graduate student enrollment. Students who were randomly selected to participate in the study received a web-based survey administered by their participating university on behalf of the Research Consortium. Using a web-based survey allowed for collection of the largest possible sample of the population, offered increased accessibility for participation, and ensured that student confidentiality was maintained.

Each student in the randomly selected sample was assigned a unique respondent identification number and received a personally addressed email containing information about the study. This email was sent by The University of Texas at Austin but was addressed from either the director of the institution's campus counseling center or other local sponsor for the study. This email invitation specified that the study was being conducted by The University of Texas at Austin but was sponsored and supported by their local campus. Included in the invitation was a link, which when clicked, took the student to a survey web page, which was customized with the colors and logo of their local campus. After reading the study information and cover letter for internet research, students had the option to either decline or consent to participate. As the student completed and submitted the survey, data was stored in two separate and unlinked data tables:

(1) an identification table, which contains respondent identification numbers, student e-mail addresses, information about whether the student accessed the survey, and if so, whether they declined or consented to participate, and

(2) a de-identified survey response table, which stores the anonymous student responses.

In order to maintain participant confidentiality, these two tables were stored separately. For the purposes of the current study, only the de-identified survey responses were utilized for data analysis. The survey data was collected and stored securely by The University of Texas Office of Survey Research on behalf of the principal investigators. Institutional Review Board approval was obtained for the described study at The University of Texas at Austin. Additionally, all participating schools gained their own IRB approval, if required to do so, with the assistance of the research coordinator for the Research Consortium.

Measures

The current study collected information regarding five domains. First, participants answered questions regarding their demographics. Second, the presence of preexisting acquired vulnerability to distress and suicidality was assessed using the short version of the Adverse Childhood Experience Scale. Third, participants' sense of coherence was measured using the short form of the Sense of Coherence Scale. Fourth, participants' current status of mental health was assessed using the short form of the Mental Health Continuum. Lastly, participants' experiences of psychological distress, suicidal ideation, and suicide attempts in the past 12-months was measured using the Distress and Suicidality Continuum.

Demographic questionnaire. Participants were asked to respond to several questions designed to gather demographic information, including age, gender, sexual orientation, race/ethnicity, religious preference, parental income and financial aid, college standing, utilization of counseling/mental health services, and military service. Please see Appendix A for full demographic questionnaire.

Acquired vulnerability to distress and suicidality. The presence of acquired vulnerability to distress and suicidality was assessed using the short version of the Adverse

Childhood Experiences Scale (ACEs). More specifically, the Behavioral Risk Factor Surveillance System (BRFSS) ACEs module was used, which was adapted from the original ACEs study by the Centers for Disease Control to collect risk factor data, in survey form, from adults in the United States. The purpose of this measure is to determine a participant's preexisting history of childhood experiences (occurring before the age of 18) that are considered adverse and pose hazard to a person's psychosocial and cognitive development (Ford et al., 2014; Rogosch et al., 2011; Leeb et al., 2011). Adverse childhood experiences on the ACEs are categorized into two groups, including household dysfunction and abuse (CDC, 2016). An exploratory factor analysis conducted on the ACEs by Mersky, Janczewski, and Topitzes (2017), resulted in a two-factor solution that aligned with the CDC's proposed categories. Specifically, items indicative of exposure to alcohol/drugs, mental illness, domestic violence, and incarceration comprised the household dysfunction factor, while items related to physical, emotional, and sexual abuse comprised the abuse factor (RMSEA = .054; CFI = .978; TLI = .962; SRMR = .046).

Research has consistently demonstrated a significant and positive relationship between the domains measured by the ACEs and increased rates of distress and suicide. For instance, it has been found that parental marital status is predictive of self-harming behavior and suicidal ideation among adolescents (Ponnet et al., 2005). Similarly, Adam, Bouckoms, and Streiner (1982) found that the experience of family instability before the age of 25 was predictive of suicidal ideation and, within their sample, suicide attempters exhibited higher family instability ratings compared to non-attempters. Additionally, findings from the WHO World Mental Health Surveys indicated that exposure to sexual and interpersonal traumas were the strongest predictors of lifetime suicidal ideation and attempts (Stein et al., 2010).

The ACEs has been shown to reliably predict suicidal ideation and attempts in both adolescent and adult populations and was chosen for inclusion in this study to assess for preexisting vulnerabilities due to the comprehensive nature of its measured domains. The BRFSS ACEs consists of 11 items that ask the respondent to indicate the presence (yes, no) and/or frequency (never, once, and more than once) at which specific experiences occurred throughout their childhood and adolescence. Sample items include "Were your parents divorced or separated?" and "How often did a parent or adult in your home ever swear at you, insult you, or put you down?" and "How often did anyone at least 5 years older than you, or an adult, ever touch you sexually?" (see Appendix B for full Adverse Childhood Experiences Scale). As expected with such a measure, the ACEs has been shown to have excellent test-retest reliability (Brown, Thacker, & Cohen, 2013). Additionally, the scale has demonstrated a high level of internal consistency (Cronbach's $\alpha = .78$) (Ford et al., 2014). Since 2009, 32 states have collected annual ACE data using the BRFSS Adverse Childhood Experience Scale to track and examine the relationship between risk factors and health conditions (CDC, 2016). The development and widespread use of this scale by the CDC provides evidence that this measure is an important and valid tool for researching pre-existing vulnerabilities and risk factors.

For the current study, two variables were created as an inventory to account for the experiences of home challenges and abuse among participants, thus reflecting the two ACEs categories proposed by the CDC (2016). As per the design of the ACEs, the first six questions of the scale constitute household dysfunction and the last five questions of the scale constitute abuse. Thus, two vulnerability variables were created, including ACEs home challenges and ACEs abuse. The home challenges variable, used in the following analyses and results, includes a summed score of the number of items a participant said "Yes," "Once," or "More Than Once"

to for the first six items on the ACEs scale. This results in a range of possible scores from 0-6 on the ACEs home challenges subscale. The abuse variable used in the following analyses and results includes a summed score of the number of times a participant endorsed having experienced the type of abuse referred to in each question for the last five questions. More specifically, response options for ACEs items 6-11 include "Once," "More Than Once," and "Never." A response of "Never" received a score of zero, a response of "Once" received a score of one, and a response of "More Than Once" received a score of two on the ACEs abuse items. Therefore, possible scores ranged from 0-10 on the ACEs abuse subscale.

Sense of coherence. Participants' sense of coherence was measured using the short form of Antonovksy's Sense of Coherence Scale. The short form of the Sense of Coherence Scale (SOC-13) consists of 13 items intended to measure the components of sense of coherence that, in totality, influence movement along the ease/dis-ease continuum (Antonovsky, 1993). More specifically, the SOC-13 is designed to assess one's level of comprehensibility, manageability, and meaningfulness; the three domains comprising one's global sense of coherence (Antonovsky, 1993; Eriksson & Lindstrom, 2005). Using a Likert-scale, participants were asked to respond to items such as "How often do you have the feeling that there is little meaning in the things you do in your daily life?" and "How often do you have feelings that you're not sure you can keep under control?" (see Appendix C for full SOC-13).

The 13-item SOC scale has a high correlation (r = .96) with the longer, 29-item SOC scale (Eriksson & Lindstrom, 2005). Additionally, the SOC-13 has consistently demonstrated high levels of reliability in previous studies. For instance, test-retest correlations after 12-18 months range from .69 to .77, while internal consistency, measured using Cronbach's alpha, range from .70 to .92 across 127 studies (Eriksson & Lindstrom, 2005; Eriksson & Mittelmark,

2017). Previous research has also demonstrated the scale's reliability with American Indian participants. For instance, Albino et al. (2015) found that the 13-item SOC scale demonstrated good internal reliability ($\alpha = .84$) among participants living in the Navajo Nation reservation. Importantly, while the reliability of the SOC-13 has been established, the structure of the sense of coherence construct is highly complex (Eriksson & Mittelmark, 2017). As such, validity estimates of the SOC-13 vary throughout the literature. Overall, the scale has been shown to have moderate consensual validity, which refers to the agreement of experts that a measure is valid and is determined by the general acceptance and use of a scale. For instance, the original SOC-13 is the most commonly used version of the scale throughout research in the scientific disciplines, despite there being a large number of modified sense of coherence instruments available (Eriksson & Lindstrom, 2005). Additionally, sense of coherence has demonstrated moderate to high correlations with other measures of health and well-being, providing evidence for its strong criterion validity (Eriksson & Lindstrom, 2005). For example, sense of coherence has been shown to be negatively correlated with the Hopkin's Symptoms Checklist ($r = -.75$), positively correlated with the Mental Health Inventory ($r = .51 - .65$), and negatively correlated with State-Trait Anxiety Inventory among college students ($r = -.68$) (Eriksson & Lindstrom, 2005). While the SOC-13 has shown good reliability, consensual validity, and criterion validity, evidence of construct validity of the scale has varied in strength and consistency from one study to the next, as described below (Antonovsky, 1993; Feldt et al., 2007; Sandell, Blomberg, & Lazar, 1998).

Previous research has found varied results regarding the factor structure of the SOC-13 scale. Eriksson and Lindström (2005) note that some studies, in an attempt to measure sense of coherence as a unidimensional construct, have confirmed a one-factor solution through factor

analysis of the SOC-13, while others have failed to do so. Other researchers have attempted to extract factors based on Antonovsky's theorized components of sense of coherence, including manageability, comprehensibility, and meaning in life. Extracting and measuring these specific factors provides some insight into the development and maintenance of sense of coherence and can be used to inform programming efforts aimed at bolstering well-being by giving specific targets for intervention. The attempts to extract these components, however, have yielded varying factor solutions that have been difficult to replicate (Eriksson & Mittelmark, 2017). For instance, while some studies have been successful in extracting two-and three-factor sense of coherence models, others have been unable to find support for a common factor, nor for the three dimensions (Sandell et al., 1998). Overall, recent research has shown that sense of coherence is multidimensional, rather than unidimensional, "with all three dimensions constantly interacting with each other and together to form a common, overarching factor, sense of coherence" (Eriksson & Mittelmark, 2017, p. 99). In line with these findings, Antonovsky (1997) originally urged against the attempt to break the Sense of Coherence Scale into the three proposed components for measurement and analysis. Instead, he argued that based on theoretical grounds, sense of coherence should be conceptualized and measured as one general factor; he theorized this factor would be comprised of manageability, comprehensibility, and meaning in life, however, he noted the overlapping relationship between these dimensions would make it difficult to separate the three components statistically (Antonovsky, 1993).

Despite the complex nature of the sense of coherence construct, previous research has consistently demonstrated its significant relationship to various physical and mental health outcomes. For instance, of particular relevance to the current study, Albino et al. (2015) found that higher sense of coherence was related to lower reported distress among reservation-based

American Indian participants. The foundation of previous research, as outlined in previous sections, indicates that sense of coherence is a promising construct through which to examine factors that support successful coping and protect against prior vulnerabilities. For these reasons, the SOC-13 was chosen for use in the current study. For the current study, participants' SOC-13 item scores were summed and totaled, representing a global sense of coherence. The response options for the items range from 1 to 7, and while the labeling for each item varies, all are presented such that lower scores indicated lower endorsement of the item (e.g. 1 = "Very Seldom" or 1 = "Never"). Therefore, scores for sense of coherence ranged between 13 to 91, where higher scores indicate higher sense of coherence.

Mental health continuum. Participants' mental health status was measured using the short form of the Mental Health Continuum (MHC-SF). The MHC-SF consists of fourteen items that measure three dimensions of mental health including emotional well-being (three items; e.g., "Happy"), psychological well-being (six items; e.g., "That your life has a sense of direction or meaning"), and social well-being (five items; e.g., "That you had warm trusting relationships with others"). When taken together, these dimensions form a total or complete state of positive mental health (see Appendix D for full MHC-SF). Keyes (2007) notes that each item on the MHC-SF is a subjective measure of well-being and should be considered a "symptom" of mental health, representing manifestations of this unobservable state. More specifically, Keyes (2007) suggests that the more global construct of mental health is identifiable only as a collection of these symptoms. Response options for each item on the MHC-SF measure the frequency with which respondents experience each symptom of positive mental health, which provides a standard for assessment and categorization (Keyes, 2007).

Keyes (2007) has suggested that the MHC-SF can be measured one of three ways: continuous scoring (summing all items) to get a total mental health score; categorical diagnosis (using a specific algorithm) to determine respondent's placement on the flourishing to languishing continuum; or symptom dimensions (summing each subscale). The total MHC-SF, as well as its three subscales, have been found to have excellent internal consistency (total MHC $\alpha = .89$; emotional well-being $\alpha = .83$; psychological well-being $\alpha = .83$; social well-being $\alpha = .74$) (Lamers et al., 2011). Additionally, the scale has demonstrated moderate levels of test-retest reliability (.68 after three months; .65 after nine months), which is expected based on the nature of the construct (Lamers et al., 2011). For instance, as Lamers et al. (2011) notes, an instrument assessing well-being should demonstrate stability over short periods of time, however, it should also be sensitive enough to detect changes in positive mental health that an individual may experience due to life events and circumstances. In addition to its strong reliability, the MHC-SF also demonstrates good convergent validity with other measures that assess similar dimensions of positive mental health including satisfaction with life ($r = .54$), meaning in life ($r = .46$), positive affect ($r = .44$), and level of well-being in various life domains ($r = .55$) (Perugini et al., 2017).

For the current study, participants' total score was assessed using Keyes' continuous scoring method in order to obtain a second measure of global well-being comparable to sense of coherence. The current study utilized this total score in research questions concerning participants' level of mental health. Response options for each item on the MHC-SF reflect the frequency at which the respondent had experienced that symptom in the past month, ranging from 1("Never") to 6 ("Everyday"). Responses to each item were summed to create a total

mental health score ranging from 12 to 72, with higher scores indicating higher levels of mental health.

Past 12-month distress and suicidality. Status of suicidality among participants was determined by placement on the Distress and Suicidality Continuum (DSC), history of past 12-month serious suicidal ideation, history of past-12-month suicide attempt, and the number of past-12-month suicide attempts. Importantly, Drum et al. (2009) found that suicidal ideation manifests as a continuum of cognitions that, over time, can become progressively more severe. Additionally, it was found that suicidal behaviors, including suicide attempts, are often accompanied by those thoughts at the more severe end of the continuum. As a result of this research, Drum et al. (2009) developed the Distress and Suicidality Continuum as a method of assessing the severity of an individual's distress and to identify those progressing towards a suicidal crisis. This method of assessment fosters a better understanding of the progression of suicidal thoughts and behaviors and allows for intervention before an acute suicidal crisis is reached. Results from a confirmatory factor analysis have indicated that all of the above items load onto a single factor (Drum & Brownson, 2014).

The DSC is a seven-item scale presented as a series of thoughts that increase in severity, ranging from "This is all just too much" to "I will kill myself." Participants are asked to respond "Yes" or "No" to each of these items, thus identifying the types of distressing and suicidal thoughts they have experienced. Participants select all items that apply to them in the past 12-months. Possible scoring strategies for the scale are either to sum the number of responses a participant endorsed or to use the highest item a participant endorsed as a scale score. For the current study, participants' DSC scores represent the highest (most severe) item they endorsed. Serious past-12-month suicidal ideation was assessed with the following item, "During the past

12 months, have you seriously considered attempting suicide?" and past-12-month suicide attempts was measured with the question, "During the past 12 months, did you attempt suicide?" If this question was answered "Yes," the participant was then asked to indicate how many attempts were made in the past 12 months. (See Appendix E for distress and suicidality measures).

Research Questions and Hypotheses

Research Aim 1

The first aim of the current study was to explore rates of acquired vulnerability, past 12-month distress and suicidality, sense of coherence, and mental health among AI/AN students. Research questions 1-4 were intended to explore the experiences of suicide risk and protective factors among urban-based AI/AN college students to determine if racial disparities found among reservation-based populations are present in urban populations as well.

Research question 1: Controlling for age, gender, sexual orientation, religion, socioeconomic status, and college standing, do AI/AN college students report significantly different levels of acquired vulnerability to distress and suicidality compared to students of other races?

Hypothesis 1 and rationale*:* The current study used the Adverse Childhood Experience Scale (ACEs) to examine participants' acquired vulnerability to distress and suicidality. This scale measures three domains of adverse childhood experience, including family dysfunction, emotional and physical abuse, and sexual abuse; each of which has been shown to have a positive correlation with distress and suicidality (Ford et al., 2014; Ponnet et al., 2005; Adam, Bouckoms, & Streiner, 1982; Stein et al., 2010). Previous research has consistently found that AI/ANs experience higher-than-average rates of all three ACE domains (Grossman et al., 1991;

Kaplan et al., 1997). Therefore, in the current study, it was hypothesized that AI/ANs would report significantly higher rates of acquired vulnerability to distress and suicidality compared to peers of other races, as measured by the ACEs.

Research question 2*:* Controlling for age, gender, sexual orientation, religion, socioeconomic status, and college standing, do AI/AN college students report significantly different levels of past 12-month distress and suicidality compared to students of other races?

Hypothesis 2 and rationale*:* American Indian and Alaska Native young people consistently experience the highest rate of suicide of all ethnic groups in the U.S. (CDC Injury Prevention & Control: Data & Statistics (WISQARS), 2013). Previous research has shown a heightened presence of suicide risk factors throughout many AI/AN communities (Beals et al., 2005; Duran et al., 2004). As previously noted, exposure to these risk factors is associated with increased vulnerability for distress and suicidality. The dominant presence of these risk factors makes AI/AN individuals especially susceptible to suicidal thoughts and behaviors. Therefore, it was hypothesized that AI/ANs in the current study would report significantly higher rates of past 12-month distress and suicidality compared to participants of other races.

Research question 3: Controlling for age, gender, sexual orientation, religion, socioeconomic status, and college standing, do AI/AN college students report significantly different levels of sense of coherence compared to students of other races?

Hypothesis 3 and rationale: Previous research examining sense of coherence in AI/AN populations is limited. Therefore, this question was asked to determine if sense of coherence is less present among these groups. This information may prove important for future prevention strategies targeting AI/ANs. Level of sense of coherence has been linked to the presence or absence of general resistance resources, which can include a variety of positive supports and

coping mechanisms (Antonovsky, 1987). As previously noted, AI/ANs experience increased rates of family instability, abuse, and trauma which can thwart the development of adaptive coping. Therefore, it was hypothesized that AI/ANs would report significantly lower levels of sense of coherence as compared to participants of other races.

Research question 4: Controlling for age, gender, sexual orientation, religion, socioeconomic status, and college standing, do AI/AN college students report significantly different levels of mental health, as measured by the MHC-SF, compared to students of other races?

Hypothesis 4 and rationale*:* Few studies have examined AI/AN mental health and well-being using Keyes' (2005) mental health continuum. Therefore, this question was asked to determine if levels of mental health were different among this group compared to participants of other races. As previously noted, AI/ANs experience increased rates of family instability, abuse, and trauma. Previous research has found that exposure to such risk factors has the potential to decrease one's sense of well-being (Beals et al., 2005; Duran et al., 2004). As such, it was hypothesized that AI/AN participants would experience lower levels of mental health as compared to participants of other races.

Research Aim 2

The second aim of the current study was to explore the relationship between common suicide risk factors and distress and suicidality among urban AI/AN college students. Research question 5 sought to examine whether the influence of such risk factors on the development of distress and suicidality is similar among urban AI/ANs as is true for reservations-based communities as well as the general population.

Research question 5: Controlling for age, gender, sexual orientation, religion, socioeconomic status, and college standing, is there a significant relationship between acquired vulnerability (as measured by the ACEs) and past 12-month distress and suicidality among AI/AN college students?

Hypothesis 5 and rationale: It was hypothesized that those AI/AN participants who possess greater acquired vulnerability would demonstrate significantly higher rates of past 12-month distress and suicidality compared to those who possessed less vulnerability. Examining the relationship between acquired vulnerability and past 12-month distress and suicidality among AI/AN participants can provide further evidence that adverse childhood experiences are associated with increased suicidality later in life among urban-based college students.

Research Aim 3

The final research aim was to determine what protective factors exist among urban AI/AN college students that prohibit the development of distress and suicidality despite one's acquired vulnerability. Research questions 6-8 explore the protective nature of sense of coherence and mental health among AI/AN college students by examining the moderating effect of these variables on the relationship between acquired vulnerability and past 12-month distress and suicidality. Additionally, part of this research aim was to establish the Sense of Coherence Scale as a culturally appropriate measure of well-being among AI/ANs.

Research question 6*:* Controlling for age, gender, sexual orientation, religion, socioeconomic status, and college standing, does sense of coherence significantly moderate the relationship between acquired vulnerability to distress and suicidality and past 12-month distress and suicidality among AI/AN college students?

Hypothesis 6 and rationale: The moderating effect of sense of coherence on the relationship between acquired vulnerability and past 12-month distress and suicidality is expected based on previous research (Drum & Brownson, 2014). Antonovsky (1993) purported that a high level of sense of coherence allows for the use of adaptive coping strategies during a stressful experience and is associated with healthy outcomes. Therefore, it was expected that a strong sense of coherence would protect one from developing suicidal thoughts, even in the face of acquired vulnerability and risk for suicide. More specifically, it was hypothesized that sense of coherence would have a significant protective moderating effect on the relationship between acquired vulnerability and past 12-month distress and suicidality.

Research question 7*:* Controlling for gender, age, sexual orientation, religion, socioeconomic status, and college standing, does a participant's identification as AI/AN differently impact how sense of coherence moderates the relationship between acquired vulnerability and past 12-month distress and suicidality explored in research question six?

Hypothesis 7 and rationale: It was hypothesized that that ethnic identification as AI/AN would not impact the hypothesized moderating effect of sense of coherence on acquired vulnerability and past 12-month distress and suicidality. Instead, it was expected that the moderation between sense of coherence and acquired vulnerability would be found to be the most important component of the proposed model in helping explain the high rate of distress and suicidality that was hypothesized among AI/AN participants. Sense of coherence has been shown to be a valid construct across diverse populations; however, no research has been conducted to test how effectively sense of coherence protects against suicidality among AI/ANs. In order to determine the validity of this construct for use in suicide prevention with these groups, it must

first be shown that the protective qualities of sense of coherence observed in a wider population are also present in an AI/AN sub-population.

Research question 8: Controlling for age, gender, sexual orientation, religion, socioeconomic status, and college standing, does mental health, as measured by the MHC-SF, significantly moderate the relationship between acquired vulnerability and past 12-month distress and suicidality among AI/AN college students?

Hypothesis 8 and rationale: The moderating effect of mental health, as measured by the MHC-SF, on the relationship between acquired vulnerability and past 12-month distress and suicidality was expected based on previous research that illustrates the protective nature of positive mental health on presence of depressive symptoms (Keyes, 2002). Keyes (2007) purported that flourishing mental health, as opposed to languishing mental health, protects from the development or progression of distressing thoughts and depressive symptoms and is associated with healthy outcomes. Therefore, it was thought that higher levels of mental health would protect one from developing suicidal thoughts, even in the face of acquired vulnerability and risk for suicide. More specifically, it was hypothesized that mental health would have a significant protective moderating effect on the relationship between acquired vulnerability and past 12-month distress and suicidality.

Chapter 4: Results

Data Screening and Missing Data

The current study utilized a sample of college students acquired through the most recent Research Consortium study, "Understanding College Student Distress and Academic Success." A total of 13,591 students from eighteen colleges and universities participated in this study, including 248 AI/AN students. Power analysis was conducted using G*Power 3.1 to determine the number of participants needed to ensure adequate power in the following analyses, considering all included variables (up to eight predictor variables including all controls, independent variable of interest, and interaction term). The G*Power analysis indicated that 160 participants were needed to obtain an effect size (f^2) of 0.15 with a α error probability of .05. To ensure only high-quality data was used for analysis, a specific set of data inclusion criteria were set. Specifically, the results for this study are based on data from participants that completed the entire survey, did not use only the midpoint response on four or more of the seven study scales,

did not respond with the minimum/maximum response for all items, and did not leave more than a total of eight responses blank on the psychological subscales. Using this data screening and cleaning method, a total of 12,034 participants were retained, including 229 AI/ANs (alone or in combination with other races). This complete data set was used to determine if hierarchical linear modeling was a necessary method for analysis.

Sample Demographics

To address the specific research questions posed by the current study, the subset of 229 AI/AN participants was utilized. Fifteen-percent of the AI/AN participants identified as AI/AN alone, while the majority of the sample—85%—identified as multiracial. The remaining sample, including 11,235 participants who identified as Caucasian, African American, Asian, or Hispanic (alone or in combination; excluding AI/AN), was merged into one group and was used for research questions examining differences between AI/ANs and participants of other races. This comparison group will be referred to throughout the following sections as "participants of other races" and represents the racial and ethnic groups most commonly referred to by the CDC and other national agencies when examining racial disparities in suicide. Participants included in the current study were majority female, majority heterosexual, and had a mean age of 22. Table 1 shows complete demographic information for the two subsamples, while Tables 2 and 3 show the percentage of missing data per variable from these retained participants.

Table 1

Participant Demographics

	AI/AN (*n*)	Percent	Other Races (*n*)	Percent
Age				
18-24	147	64.2%	7,114	63.3%
25-34	28	12.2%	1,717	15.3%
35-44	6	2.6%	335	3.0%
45+	8	3.5%	184	1.6%

Missing	40	17.5%	1,885	16.8%
Gender				
Male	83	36.2%	4,073	36.3%
Female	142	62.0%	6,984	62.2%
Transgender	0	0.0%	71	0.6%
Other	4	1.7%	103	0.9%
Sexual Orientation				
Heterosexual	192	83.8%	9,846	87.6%
Gay/Lesbian	7	3.1%	313	2.8%
Bisexual	19	8.3%	615	5.5%
Questioning	5	2.2%	171	1.5%
Other	6	2.6%	279	2.5%
Racial Identification				
AI/AN Alone	34	14.8%	-	-
White	164	71.6%	7,989	71.1%
Black	41	17.9%	901	8.0%
Hispanic	46	20.1%	1,496	13.3%
Asian	10	4.4%	1,567	13.9%

Table 1, cont.

Participant Demographics

	AI/AN (*n*)	Percent	Other Races (*n*)	Percent
College Standing				
1st-5th Year Undergraduates	175	76.4%	7,953	70.8%
Graduate/Medical/Law	53	23.1%	3,189	28.4%
Non-Degree/Other	1	0.4%	85	0.8%
SES (Financial Aid Recipient)				
Yes	128	55.9%	4,406	39.2%
No	46	20.1%	3,516	31.3%
Missing	55	24.0%	3,313	29.5%
Religion				
Agnostic	35	15.3%	1,571	14%
Atheist	16	7.0%	1,071	9.5%
Buddhist	11	4.8%	317	2.8%
Christian	130	56.8%	6,234	55.5%
Hindu	2	0.9%	180	1.6%
Jewish	7	3.1%	340	3%
Muslim	0	0%	134	1.2%
Native American Religion	21	9.2%	35	0.3%
Universalist	4	1.7%	137	1.2%

Other Religion	13	5.7%	380	3.4%
No Spiritual Preference	42	18.3%	2,034	18.1%

Note. Participant demographics for those who identified as American Indian or Alaska Native alone or in combination with other race(s) (n = 229); and for those who identified as White, Black, Hispanic, Asian alone or in combination with other race(s) excluding American Indian and Alaska Native (n = 11,235).

Table 2

Percentage of Missing Data per Variable—AI/ANs

Variable	*n*	Missing Data (%)
Vulnerability- Home Challenges	224	2.18
Vulnerability- Abuse	224	2.18
Sense of Coherence	225	1.75
Mental Health Continuum	222	3.06
Past 12-Month Distress and Suicidality	228	0.44

Table 3

Percentage of Missing Data per Variable—Other Races

Variable	*n*	Missing Data (%)
Vulnerability- Home Challenges	11,153	0.72
Vulnerability- Abuse	11,105	1.16
Sense of Coherence	10,950	2.54
Mental Health Continuum	10,927	2.74
Past 12-Month Distress and Suicidality	11,097	1.23

Assumptions

Before conducting the proposed analyses, the retained data was first examined to ensure that statistical assumptions of normality, linearity, homoscedasticity, and multicollinearity were met and that multiple regression was an appropriate method of analysis. The normal distributions of criterion and predictor variables were inspected among each subsample by examination of (a) the normal curves for each variable observed in the histograms, (b) the roughly normal distribution of errors observed in the P-P plots, and (c) the observed skew values for each

variable. Skew statistics indicate the DSC and the ACEs subscales were each positively skewed among both samples. Miles and Shevlin (2001) note that when interpreting skew statistics, values under 2.0 are generally considered in the acceptable range. Despite the DSC and ACEs subscales demonstrating positive skew, all values were < 1.5. Additionally, the positive skew of these variables is expected based on national prevalence rates of adverse childhood experiences and suicidality. More specifically, epidemiological research has shown that these experiences have a positively skewed distribution in the general population. Therefore, the positive skew is a result of higher frequencies of participants endorsing lower levels of distress and suicidality and fewer experiences of home challenges and abuse.

Linearity among variables was assessed by examining the scatterplots of relationships between each predictor variable and the criterion variable. All relationships demonstrated linearity among both samples. Thus, the data provides no evidence of a curvilinear or non-linear relationship existing among any of the relationships examined in this study. This finding is well supported in the literature with several previous research studies having established linear relationships among each of the predictor variables and distress and suicidality. Next, homoscedasticity of variance was assessed by examining the model residual scatterplots. Results demonstrated a random displacement of residual scores with no clustering or systematic pattern among both samples. Therefore, no evidence was found to indicate heteroscedasticity.

Lastly, bivariate correlations and variance inflation factors were examined to assess for multicollinearity among study variables. Sense of coherence showed moderate correlations with mental health and distress and suicidality among both samples. However, all correlation combinations were less than 0.80 (see Tables 4 and 5), which serves as the suggested cutoff point for identifying potentially problematic multicollinearity among variables (Yoo, et al., 2014). The

variance inflation factors (VIFs) were also examined and failed to demonstrate evidence of problematic multicollinearity among study variables. Established guidelines have determined that VIF values of 10 or greater are indicative of serious multicollinearity, which can affect the regression coefficient estimates (O'Brien, 2007). However, all variables in the current study yielded VIFs less than 3.5 among both samples, confirming that multicollinearity did not impact the regression results. In sum, all statistical test assumptions for multiple regression were tested and met.

Table 4

Bivariate Correlations for All Study Variables—AI/ANs

Variables	1	2	3	4	5
1. Home Challenges	-	-	-	-	-
2. Abuse	.47**	-	-	-	-
3. Sense of Coherence	-.19**	-.20**	-	-	-
4. Mental Health	-.17*	-.14*	.67**	-	-
5. Distress and Suicidality	.18**	.26**	-.50**	-.34**	

Note. Home Challenges = Adverse Childhood Experiences Scale (ACEs) Home Challenges subscale score; Abuse = Adverse Childhood Experiences Scale (ACEs) Abuse subscale score; Sense of Coherence = Sense of Coherence Scale- Short Form (SOC-13); Mental Health = Mental Health Continuum- Short Form (MHC-SF); Distress and Suicidality = Distress and Suicidality Continuum (DSC) maximal value. $^{**}p < 0.01$; $^{*}p < 0.05$.

Table 5

Bivariate Correlations for All Study Variables—Other Races

Variables	1	2	3	4	5
1. Home Challenges	-	-	-	-	-
2. Abuse	.41**	-	-	-	-
3. Sense of Coherence	-.21**	-.28**	-	-	-
4. Mental Health	-.18**	-.22**	.66**	-	-

5. Distress and Suicidality	.19**	.26**	-.54**	-.48**

Note. Home Challenges = Adverse Childhood Experiences Scale (ACEs) Home Challenges subscale; Abuse = Adverse Childhood Experiences Scale (ACEs) Abuse subscale; Sense of Coherence = Sense of Coherence Scale- Short Form (SOC-13); Mental Health = Mental Health Continuum- Short Form (MHC-SF); Distress and Suicidality = Distress and Suicidality Continuum (DSC) maximal value. **$p < 0.01$.

Intraclass Correlation Coefficients

Hierarchical linear modeling (HLM) is often used when analyzing data that have a natural clustering/hierarchical structure. This type of multilevel modeling is a more appropriate analysis when the statistical assumption of independence of observations is violated within a data set. A violation of this assumptions indicates that observed scores may be correlated by a factor other than what is observed in the data, and therefore, the errors of these scores are correlated as well. The sample used in the current study is one in which a natural clustering or hierarchical structure is possible, due to the university/college grouping of participants. Therefore, it is imperative that the necessity of using HLM for the current study be addressed, as ignoring correlated errors can lead to an increase in Type I error rate—standard errors can be underestimated and it is more likely to find a significant result that may not, in fact, exist.

To determine whether HLM was the appropriate analytical method for this study, the intraclass correlation coefficients (ICCs) were measured. An ICC measures how much a grouping variable (attending a specific institution) contributes to the variance in observed responses. The ICC models what percent of the variance can be attributed to this grouping variable, with a larger ICC indicating a higher risk of making a Type I error if the nested structure of data is ignored. However, if ICCs are low (less than 0.05), this indicates that the multilevel structure of the data, or the university groupings of participants, do not significantly contribute to the variance in the observed measures.

The ICC for each individual item from each scale was measured and checked to ensure appropriateness of subsequent analyses for the current study. The value of all relevant ICCs ranged from 0.0015 to 0.0222. All ICCs fell far below the acceptable standard (0.05), indicating that use of HLM is unnecessary (see Appendix F for full report of item ICCs). Therefore, multiple regression analysis was used for determining the results of the given research questions.

Scale Statistics

The variables of interest in the current study, including sense of coherence, mental health, and distress and suicidality, each represent latent constructs that are directly unobservable. As such, it is imperative that scales measuring these constructs be validated so that one can be confident in the interpretation and applicability of results pertaining to their use. Each scale used in the current study has been validated by previous research. However, it was important that the scales were validated among the current sample as well to ensure they were accurately measuring each construct. The validation of the ACEs is unique, in that it measures childhood adversity—a construct that is directly observable. In fact, the ACEs serves to inventory the actual experiences of respondents. As such, the validation of the ACEs in the current study was unnecessary. The following section outlines the validation of the remaining scales including the SOC-13, MHC-SF, and the DSC among the current samples.

Validation of the SOC-13. To explore the dimensional nature of sense of coherence, and to determine the best-fitting factor solution for the current study, confirmatory and exploratory factor analyses of the SOC-13 were performed using both the total Research Consortium study sample (N = 11,729), as well as the AI/AN subsample (n = 229) (Runyon, 2017). First, goodness-of-fit indicators were examined to determine if a unidimensional nature of sense of coherence was evident in the current data. The CFA performed on the full student sample (N =

11,729) did not support a one-factor solution (CFI and TLI < .90; RMSEA > .06), nor did the CFA performed on the AI/AN subsample (n = 229) (CFI and TLI < .90; RMSEA > .06). Therefore, it was determined that a unidimensional solution was not appropriate for the SOC-13 in the current study. Next, exploratory factor analyses on the SOC-13 were performed to further explore the presence of a potential underlying factor structure that could be used to interpret results from the current study. The EFAs utilized the AI/AN subsample (n = 229) as well as a partial sample of students from the total Research Consortium study sample (n = 4,011). Results from both EFAs failed to support a clear factor solution (Runyon, 2017). Thus, among the samples in the current study, the relationship between the items on the SOC-13 was nuanced and could not be explained by simply measuring the theorized components (manageability, comprehensibility, meaning in life). These results fall in line with Antonovsky's (1993) assertion that the dimensions of sense of coherence cannot be easily separated and measured due to their constant interactions. After exploring potential factor solutions of the SOC-13 with the current study sample, it was determined that sense of coherence was best measured and interpreted as a single summed score that represents the "global sense of coherence," "in its totality," (Eriksson & Mittelmark, 2017, p. 97) as defined by the items on the scale. As such, participants' scores on each of the thirteen items were summed and totaled. Scores ranged from 13-91, with higher scores indicating higher sense of coherence.

Validation of the MHC-SF. Previous research has demonstrated strong reliability and validity of the MHC-SF, both when measured as a total state of mental health and when broken down and measured by dimension (Lamers et al., 2011). As such, confirmatory factor analyses were performed to explore the dimensional nature of mental health and to determine the best-fitting factor solution for the current study. First, a three-factor solution examining the

dimensions of mental health was tested using confirmatory factor analysis with the full Research Consortium sample (N = 11,729) (Runyon, 2017). Initial results from the CFA showed that the three-factor solution did not fit the model particularly well (CFI and TLI < .90; RMSEA > .06). However, modification indices indicated that removing items four and five (both part of the social well-being subscale) would improve the three-factor solution due to low factor loadings of these items. These two items were removed from the scale, which led to sufficient support for a three-factor model (CFI = .968; TLI = .959; RMSEA = .067; SRMR = .026). Next, a higher-order CFA was conducted to test Keyes' (2007) theory that total mental health, as a more global construct, is responsible for emotional, psychological, and social well-being and that these three latent factors represent "symptoms" of positive mental health. Results demonstrated that this theory holds true among the current sample, as the higher-order model produced the same fit as the three-factor model, thus providing support for using a total MHC score to explore a complete state of mental health in its relationships to other variables (Runyon, 2017). As such, participants' modified MHC-SF item scores were summed and totaled (excluding items four and five), representing one's total mental health. Scores ranged from 12-72, with higher scores representing higher levels of mental health.

Validation of the DSC. In order to confirm the continuous nature of the DSC, participants' responses were assessed by Runyon (2017). Initial analysis using the full Research Consortium sample (N = 11,880) indicated that the third item in the continuum ("I have to escape") was not functioning as intended; many participants were endorsing this item before the first or second item, leaving their total score and highest score misaligned. While the two scores were highly correlated (r = .95, p < .05), only 81.1% of responses on the DSC showed alignment of total and highest scores, leaving 19.9% misaligned. Therefore, a second analysis with the third

item removed was performed, which resulted in an increased correlation between the highest item endorsed and the number of items endorsed ($r = .96$, $p < .05$). Removing this item from the DSC resulted in 93.5% response alignment between total and highest scores (Runyon, 2017).

These same analyses were performed to confirm that the DSC functions similarly among the AI/AN sample used in the current study. As with the larger sample, the unmodified DSC total and highest scores were highly correlated ($r = .94$, $p < .01$). However, removal of item three, "I have to escape," further improved this correlation ($r = .96$, $p < .01$). Additionally, removing this item led to higher alignment between the total and highest scores. Prior to removal, 73.1% of total and highest DSC scores were aligned. After removal, the scale's continuous nature was improved, with 89.9% alignment between total and highest DSC scores. For the current study, participants' highest endorsed item from the modified six-item DSC scale was used. Scores ranged from 0-6, with higher scores indicating higher or more severe distress and suicidality.

Scale reliability. Tables 6 and 7 present the final scale statistics, including Cronbach's alpha, skewness, and kurtosis for all measures used in the current study. It has been suggested that Cronbach's alpha equal to .70 is considered acceptable; values greater or equal to .80 are considered good; and values of .90 or greater are considered excellent (George & Mallery, 2010; Kline, 2011). According to these guidelines, the reliability estimates of each scale ranged from acceptable to excellent.

Table 6

Scale Statistics—AI/ANs

	n	α	*Skewness*	*Kurtosis*
ACEs	221	.74	.94	.69
SOC-13	225	.83	-.14	-.02
MHC-SF	222	.89	-.23	-.55

DSC	228	.79	1.68	-.12

Table 7

Scale Statistics—Other Races

	n	α	*Skewness*	*Kurtosis*
ACEs	11,034	.70	1.35	2.07
SOC-13	10,950	.86	-.17	-.32
MHC-SF	10,927	.92	-.50	-.15
DSC	11,097	.77	1.14	.80

Importantly, the DSC and ACEs serve as an inventory of vulnerability and suicidality experiences. As expected, both of these scales were positively skewed, which demonstrates that a higher proportion of participants endorsed lower levels of vulnerability and suicidality. However, that the skew and kurtosis of these scales still fall within an acceptable range and it can be assumed that the distribution of responses on these measures did not significantly alter study results (George & Mallery, 2010; Kline, 2011).

Descriptive Statistics

Descriptive statistics for each study variable are provided in Tables 8 and 9.

Table 8

Descriptive Statistics for Continuous Study Variables (AI/AN Participants)

	n	*M*	*SD*	Score Range
Vulnerability- Home Challenges	224	2.00	1.67	0-6
Vulnerability- Abuse	224	2.04	2.14	0-10
Sense of Coherence	225	56.76	12.23	22-86
Mental Health	222	49.75	10.71	22-72

Past 12-Month Distress & Suicidality	228	1.75	1.68	0-6

Table 9

Descriptive Statistics for Continuous Study Variables (Other Races)

	n	*M*	*SD*	Score Range
Vulnerability- Home Challenges	11153	1.31	1.42	0-6
Vulnerability- Abuse	11105	1.33	1.73	0-10
Sense of Coherence	10950	58.29	12.94	13-91
Mental Health	10927	51.01	11.49	12-72
Past 12-Month Distress & Suicidality	11097	1.49	1.48	0-6

Primary Analyses: Between Group Differences

The first aim of the current study was to assess whether AI/AN urban-based college students experience differences in rates of acquired vulnerability and distress and suicidality compared to participants of other ethnic groups. These experiences have been unstudied among this unique subset of the AI/AN population. Therefore, one goal of the current study was to determine if patterns of suicidal risk among participants mirror those found in the general U.S. population.

Research question 1: Controlling for age, gender, sexual orientation, religion, SES, and college standing, do AI/AN participants report significantly different levels of acquired vulnerability to distress and suicidality compared to participants of other ethnic groups?

Analyses and results. Simultaneous multiple linear regression analyses were performed to determine if there were significant differences between AI/AN participants and participants of other races in level of vulnerability to distress and suicidality. Specifically, multiple regression analyses were calculated to examine experiences of home challenges and abuse based on

ethnicity. First, the home challenges variable was regressed on ethnicity, while controlling for age, gender, sexual orientation, religion, socioeconomic status, and college standing. Results demonstrated that there were significant ethnic group differences in experience of home challenges, $\beta = .05$, $t(9432) = 5.4$, $p < .001$, with AI/AN participants reporting significantly more experiences of home challenges vulnerability ($M = 2.00$, $SD = 1.67$) compared to participants of other races ($M = 1.31$, $SD = 1.42$). All included control variables significantly contributed to the regression model as well, including age ($\beta = .07$, $t(9432) = 5.67$, $p < .001$), gender ($\beta = .06$, $t(9432) = 5.97$, $p < .001$), sexual orientation ($\beta = .12$, $t(9432) = 11.46$, $p < .001$), religion ($\beta = -0.05$, $t(9432) = -4.45$, $p < .001$), socioeconomic status ($\beta = .24$, $t(9432) = 14.61$, $p < .001$), and college standing ($\beta = .22$, $t(9432) = 12.80$, $p < .001$). Together, these variables explained a significant proportion of variance in home challenges scores, $R^2 = .06$, $F(7, 9432) = 78.90$, $p < .001$. To further explore the racial differences in experience of home challenges, means for each home challenges category were compared using analysis of variance (ANOVA). Participants were excluded if they answered, "Don't Know/Not Sure" to any item. Findings showed that AI/AN participants experienced significantly higher rates of all but one ACEs home challenges category. Table 10 shows the proportion of participants who endorsed having experienced each home challenge category.

Table 10

Proportion of Participants Endorsing Each ACEs Home Challenges Category

Percentage of sample answering "Yes"	AI/ANs	Other Races	ANOVA *F*	*p*
Before the age of 18,				
Did you live with anyone who was:				
1. Depressed, mentally ill, or suicidal?	43%	31%	19.29***	< .001
2. A problem drinker or alcoholic?	21%	18%	2.31	.129
3. Abused illegal drugs or prescriptions?	23%	14%	17.16***	< .001

4. Served time or was sentenced to jail?	14%	6%	28.42***	< .001
Were your parents:				
5. Divorced or separated?	38%	24%	27.75***	< .001
Did your parents or adults in your home:				
6. Slap, hit, kick, punch, or beat each other?	21%	14%	9.78**	.002

Note. AI/AN (n = 229); Other Races (n = 11,235). Item 6 includes those who reported domestic violence occurring "Once" or "More Than Once." ANOVA F and p values represents the significance of the mean difference between groups on each item. $^{**}p < .01$, $^{***}p < .001$.

Next, abuse was regressed on ethnicity, while controlling for age, gender, sexual orientation, religion, socioeconomic status, and college standing. Results showed significant ethnic group differences in experience of abuse, $\beta = .05$, $t(9390) = 4.83$, $p < .001$, with AI/AN participants reporting significantly higher rates of abuse ($M = 2.04$, $SD = 2.14$) compared to participants of other races ($M = 1.33$, $SD = 1.73$). All included control variables, except religion, significantly contributed to the regression model as well, including age ($\beta = .12$, $t(9390) = 10.86$, $p < .001$), gender ($\beta = .09$, $t(9390) = 8.32$, $p < .001$), sexual orientation ($\beta = .16$, $t(9390) = 15.51$, $p < .001$), socioeconomic status ($\beta = .13$, $t(9390) = 7.65$, $p < .001$), and college standing ($\beta = .13$, $t(9390) = 7.30$, $p < .001$). Together, these variables also explained a significant proportion of variance in abuse scores, $R^2 = .06$, $F(7, 9390) = 84.14$, $p < .001$. To further explore the racial differences in experience abuse, means for each abuse category were compared using analysis of variance (ANOVA). Findings showed that AI/AN participants experienced significantly higher rates of all ACEs abuse categories. Table 11 shows the proportion of participants who endorsed having experienced each abuse category at least once before the age of 18.

Table 11

Proportion of Participants Endorsing Each ACEs Abuse Category

Percentage of sample answering "Yes"	AI/ANs	Other Races	ANOVA F	p

Before the age of 18,				
Did a parent or adult in your home ever:				
7. Physically hurt you in any way?	26%	18%	10.37***	.001
8. Swear at you, insult you, put you down?	61%	47%	21.60***	< .001
Did anyone at least 5 years older than you ever:				
9. Touch you sexually?	15%	9%	10.50***	.001
10. Try to make you touch them sexually?	16%	6%	34.88***	< .001
11. Force you to have sex?	6%	2%	16.02***	< .001

Note. AI/AN (n = 229); Other Races (n = 11,235). ANOVA F and p values represents the significance of the mean difference between groups on each item. **$p < .01$, ***$p \leq .001$.

Research question 2: Controlling for age, gender, sexual orientation, religion, socioeconomic status, and college standing, do AI/AN participants report significantly different levels of past 12-month distress and suicidality compared to participants of other ethnic groups?

Analysis and results. A simultaneous multiple linear regression analysis was performed to determine if there were significant differences between AI/AN participants and participants of other races in level of past 12-month distress and suicidality. Past 12-month distress and suicidality was regressed on ethnicity, while controlling for age, gender, sexual orientation, religion, SES, and college standing. Results demonstrated significant ethnic group differences in past 12-month distress and suicidality, $\beta = .02$, $t(9399) = 1.97$, $p = .048$, with AI/AN participants reporting significantly higher levels of distress and suicidality ($M = 1.75$, $SD = 1.68$) compared to participants of other racial and ethnic groups ($M = 1.49$, $SD = 1.48$). All included control variables significantly contributed to the regression model as well, including age ($\beta = -.06$, $t(9399) = -4.99$, $p < .001$), gender ($\beta = .09$, $t(9399) = 8.61$, $p < .001$), sexual orientation ($\beta = .20$, $t(9399) = 19.56$, $p < .001$), religion ($\beta = -.05$, $t(9399) = -5.05$, $p < .001$), socioeconomic status ($\beta = .08$, $t(9399) = 4.80$, $p < .001$), and college standing ($\beta = .11$, $t(9399) = 6.26$, $p < .001$). Together, these variables explained a significant proportion of variance in past 12-month distress

suicidality scores, $R^2 = .07$, $F(7, 9399) = 104.84$, $p < .001$. To further assess the severity of suicidality, participants were asked if in the past 12-months they had "seriously considered suicide" or if they had attempted suicide. Using ANOVA, responses to these items were compared to determine differences in rates of serious suicidal ideation and attempts among AI/AN participants and participants of other races. Results indicated that there was no significant difference in the rates of serious suicidal ideation, however, AI/AN participants were significantly more likely to have attempted suicide, as compared to participants of other races, in the past 12 months (see Table 12). More specifically, AI/AN participants were 2.5 times more likely to have attempted suicide during this time frame.

Table 12

Past 12-Month Serious Suicidal Ideation and Suicide Attempts

Percentage of sample answering "Yes"	AI/ANs	Other Races	ANOVA *F*	*p*
In the past 12 months have you:				
1. Seriously considered suicide?	9%	6%	2.65	.104
2. Attempted suicide?	2%	0.8%	5.73*	.017

Note. AI/AN (n = 229); Other Races (n = 11,233). ANOVA F value represents the significance of the mean difference between groups on each item. *$p < .02$

In addition to exploring acquired vulnerability, the second aim of the current study was to explore the presence of well-being, including sense of coherence and mental health, among AI/AN urban-based college students. Furthermore, differences in rates of sense of coherence and mental health were compared between each subsample to better understand the presence of well-being among AI/ANs relative to students of other races.

Research question 3: Controlling for age, gender, sexual orientation, religion, socioeconomic status, and college standing, do AI/AN participants report significantly different levels of sense of coherence compared to participants of other races?

Analysis and results. A simultaneous multiple linear regression analysis was performed to determine if there were significant differences between AI/AN participants and participants of other races in level of sense of coherence. Sense of coherence was regressed on ethnicity, while controlling for age, gender, sexual orientation, religion, socioeconomic status, and college standing. Results indicated that there was no significant difference between ethnic groups in level of sense of coherence, β = -.02, t(9272) = -.1.68, p = .092. The control variables included in the model, however, did significantly predict level of sense of coherence, including age (β = .14, t(9272) = 11.03, p < .001), gender (β = -.02, t(9272) = -2.22, p = .026), sexual orientation (β = -.18, t(9272) = -17.31, p < .001), religion (β = .05, t(9272) = 5.02, p < .001), socioeconomic status (β = -.07, t(9272) = -4.20, p < .001), and college standing (β = -.12, t(9272) = -7.15, p < .001). Together, these control variables explained a significant proportion of variance in sense of coherence scores, R^2 = .08, F(7, 9272) = 112.03, p < .001.

Research question 4: Controlling for age, gender, sexual orientation, religion, socioeconomic status, and college standing, do AI/AN participants report significantly different levels of mental health, as measured by the MHC-SF, compared to participants of other races?

Analysis and results. A simultaneous multiple linear regression analysis was performed to determine if there were significant differences between AI/AN participants and participants of other races in level of mental health, as measured by the Mental Health Continuum-Short Form (MHC-SF). Mental health was regressed on ethnicity, while controlling for age, gender, sexual orientation, religion, socioeconomic status, and college standing. Similar to the regression model for sense of coherence, there was no significant difference between ethnic groups on mental health scores, β = -.02, t(9264) = -1.56, p = .12. Certain control variables included in the model, however, did significantly predict level of mental health, including age (β = .06, t(9264) = 4.34,

$p < .001$), sexual orientation ($\beta = -.20$, $t(9264) = -18.33$, $p < .001$), religion ($\beta = .11$, $t(9264) = 10.67$, $p < .001$), socioeconomic status ($\beta = -.06$, $t(9264) = -3.57$, $p < .001$), and college standing ($\beta = -.05$, $t(9264) = -2.92$, $p = .004$). The multiple regression model, with all seven predictors, explained a significant proportion of variance in MHC-SF scores, $R^2 = .06$, $F(7, 9264) = 80.61$, $p < .001$.

Tests of Main Effects

The third aim of the current study was to explore the direct relationships between acquired vulnerability and distress and suicidality. Previous research has established the links between certain risk factors, including exposure to home challenges and abuse, and the experience of distress and suicidality (CDC, 2016). Importantly, these findings have been found in both the general U.S. population and among AI/ANs (Freedenthal & Stiffman, 2004). However, the current study sought to determine whether these risk factors operate similarly among urban-based AI/AN college students, an unstudied subset of the AI/AN population. As such, the effects of home challenges and abuse on distress and suicidality were examined.

Research question 5: Controlling for age, gender, sexual orientation, religion, socioeconomic status, and college standing, is there a significant relationship between acquired vulnerability to distress and suicidality and past 12-month distress and suicidality among AI/AN participants?

Analysis and results. Simultaneous multiple linear regression analyses were performed to determine if there was a significant relationship between level of acquired vulnerability, including home challenges and abuse, and past 12-month distress and suicidality among AI/AN

participants. First, past 12-month distress and suicidality was regressed on home challenges, while controlling for age, gender, sexual orientation, religion, socioeconomic status, and college standing. Results indicate that experience of home challenges significantly predicted level of past 12-month distress and suicidality, $\beta = .15$, $t(175) = 1.97$, $p = .05$ (see Figure 1). Importantly, none of the control variables were significantly related to past 12-month distress and suicidality within this particular regression model, including age ($\beta = -.08$, $t(175) = -.84$, $p = .40$) gender ($\beta = .07$, $t(175) = .85$, $p = .40$), sexual orientation ($\beta = .03$, $t(175) = .35$, $p = .73$), religion ($\beta = .07$, $t(175) = .86$, $p = .39$), socioeconomic status ($\beta = .03$, $t(175) = .25$, $p = .80$), and college standing ($\beta = .07$, $t(175) = .52$, $p = .60$). The multiple regression model, including all seven predictor variables, did not explain a significant proportion of variance in past 12-month distress and suicidality, $R^2 = .01$, $F(7, 175) = 1.24$, $p = .27$.

The current finding of a nonsignificant F test ($R^2 = .01$, $F(7, 175) = 1.24$, $p = .27$) shows that participants' scores on all seven independent variables, when taken together, do not provide a robust model for predicting participants' distress and suicidality scores. Notably, results showed that the seven independent variables (including home challenges and six control variables) initially accounted for 5% of the variance in past 12-month distress and suicidality scores ($R^2 = .047$). However, the adjusted R^2 value, which is a modified version of R^2 that takes into account the number of predictors in the model, showed a 4% decrease in the explained variance (adjusted $R^2 = .01$). Importantly, adjusted R^2 decreases when the predictive quality of a regression model deteriorates as more variables are added. The discrepancy between R^2 and adjusted R^2 found in the current analysis indicates that there are too many nonsignificant—or unimportant—variables included in the model, which weakens its overall ability to offer a precise prediction of past 12-month distress and suicidality scores (Williams, 2015; Frost, 2013).

In the current analysis, all six control variables were found to be nonsignificant, thus negatively impacting the model's predictive ability. However, the regression coefficients for each independent variable, including home challenges, still offer important information regarding the effects of these variables on past 12-month distress and suicidality. Examining these direct effects, was in fact, the focus of the current research question. Again, results show that there was a significant relationship between home challenges and past 12-month distress and suicidality—albeit, a not particularly strong one; for every standard deviation increase in home challenges score, participants experienced a .15 standard deviation increase in past 12-month distress and suicidality score ($p = .05$).

Next, a second multiple regression analysis was completed to determine the effect of abuse on past 12-month distress and suicidality. More specifically, past 12-month distress and suicidality was regressed on abuse, while controlling for age, gender, sexual orientation, religion, socioeconomic status, and college standing. Results showed that experience of abuse significantly predicted level of past 12-month distress and suicidality, $\beta = .19$, $t(178) = 2.59$, $p = .01$ (see Figure 1). Similar to the previous regression model examining home challenges, none of the control variables in the current model were significantly related to past 12-month distress and suicidality, including age ($\beta = -.09$, $t(178) = -.88$, $p = .38$) gender ($\beta = .02$, $t(178) = .30$, $p = .76$), sexual orientation ($\beta = .03$, $t(178) = .42$, $p = .68$), religion ($\beta = .04$, $t(178) = .53$, $p = .60$), socioeconomic status ($\beta = .07$, $t(178) = .58$, $p = .57$), and college standing ($\beta = .11$, $t(178) = .82$, $p = .41$). Therefore, only one of seven independent variables included in the model was significantly related distress and suicidality. As such, the multiple regression model, including all seven predictor variables, did not explain a significant proportion of variance in past 12-month

distress and suicidality when the number of included independent variables was taken into account, $R^2 = .03$, $F(7, 178) = 1.69$, $p = .11$.

Similar to the analysis in the first step of research question five, which examined the relationship between home challenges and past 12-month distress and suicidality, the current finding of a nonsignificant *F* test ($R^2 = .03$, $F(7, 178) = 1.69$, $p = .11$) shows that participants' scores on all seven independent variables, including abuse and all six control variables, do not significantly predict participants' distress and suicidality scores (De Mars, 2012). The overall *F* test for the current multiple regression model showed a similar decrease in explained variance between R^2 (.06) and adjusted R^2 values (.03) as the previous home challenges model when the number of predictors in the model were statistically accounted for. As previously noted, this type of discrepancy between R^2 and adjusted R^2 is indicative of there being too many nonsignificant control variables included in the model. Importantly, however, in the context of the current research question, the regression coefficients of the independent variables still provide important information in regard to their effects on distress and suicidality. More specifically, these results indicate that abuse has an important impact on the development of distress and suicidality; for every standard deviation increase in abuse score, participants will experience a .19 standard deviation increase in past 12-month distress and suicidality ($p = .01$).

While multiple regression can be a useful tool in building a prediction model, the main reason for its use in psychological research is to tease apart the effects of different predictors on a specific outcome (Baguley, 2012). In this case, the current research question is focused on confirming the hypothesized relationship between acquired vulnerability and past 12-month distress and suicidality. Results indicate that the proposed relationship between these variables

exists among the current AI/AN sample; home challenges and abuse were both significantly related to past 12-month distress and suicidality among participants.

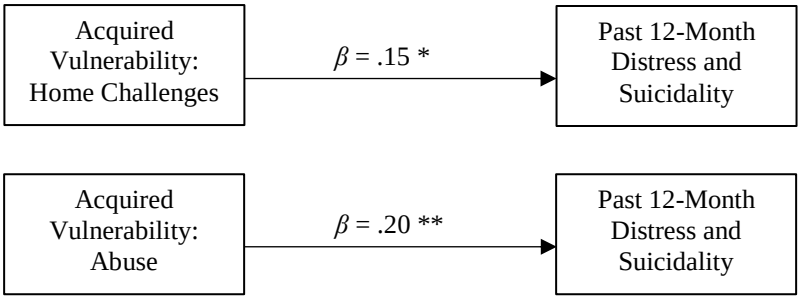

Figure 1. Main effects of home challenges and abuse (acquired vulnerability) on past 12-month distress and suicidality among AI/AN students. * $p = .05$; ** $p = .01$

Test of Moderation

The majority of individuals who are exposed to, or possess, suicide risk factors do not go on to experience serious suicidal ideation or complete suicide. As such, the fourth aim of the current study was to explore what protective qualities are experienced by urban-based AI/AN college students that prevent the development of suicidality. More specifically, the goal of the following research questions was to determine if sense of coherence and mental health inhibit the development of distress and suicidality despite the presence of acquired vulnerability.

Research question 6: Controlling for age, gender, sexual orientation, religion, socioeconomic status, and college standing does sense of coherence significantly moderate the relationship between acquired vulnerability to distress and suicidality and past 12-month distress and suicidality among AI/AN participants?

Analysis and results. Multiple linear regression analyses were performed to examine sense of coherence as a moderator of the relationship between acquired vulnerability and distress and suicidality. Importantly, only participants who scored greater or equal to one on the ACEs

home challenges and abuse subscales were included in the following moderation analyses. Participants who scored zero on these scales were excluded, as a score of zero represents an absence of vulnerability. Therefore, to ensure that the moderation analyses were examining the relationship between acquired vulnerability and past 12-month distress and suicidality, it was important that participants only be included who endorsed those experiences which qualify as acquired vulnerability in the current study (home challenges or abuse). Examining the interaction of sense of coherence with participants who scored zero on home challenges or abuse would simply lead to an examination of the direct effect of sense of coherence on distress and suicidality scores.

First, a multiple regression analysis was performed to examine the moderating effect of sense of coherence and home challenges, while controlling for age, gender, sexual orientation, religion, socioeconomic status, and college standing. Sense of coherence, home challenges, and the control variables were entered in the first step of the regression analysis (model 1). In the second step of the regression analysis, the interaction term between sense of coherence and home challenges was entered (model 2). Results show that model 1 is significant, accounting for 23% of the variance in past 12-month distress and suicidality scores, $R^2 = .228$, $F(8, 132) = 6.17$, $p < .001$. Model 2, which includes the interaction term, was also significant, $R^2 = .225$, $F(9, 131) = 5.51$, $p < .001$. However, model 2 did not account for significantly more variance in past 12-month distress and suicidality scores than model 1 ($\Delta R^2 = .002$, $p = .52$) and the sense of coherence and home challenges interaction term was not significant, $\beta = -.07$, $t(131) = -.65$, $p = .52$. Therefore, sense of coherence was not shown to significantly moderate the relationship between the experience of home challenges (scores ranging from 1-6) and past 12-month distress and suicidality. Despite the nonsignificant interaction term, model 2 remains significant,

explaining nearly 23% of the variance in past 12-month distress and suicidality; this result is due to the significant effect found for sense of coherence. More specifically, model 2 showed that sense of coherence significantly predicted past 12-month distress and suicidality scores (β = -.43, t(131) = -4.03, p < .001), while the relationship between home challenges and suicidality was nonsignificant (β = -.002, t(131) = -.03, p = .98).

Importantly, as previously noted, results from research question five indicated that home challenges (scores ranging from 0-6) and control variables (age, gender, sexual orientation, religion, socioeconomic status, college standing) accounted for only 1% of the variance in past 12-month distress and suicidality and there was a significant direct effect between home challenges and distress and suicidality. However, when sense of coherence was added to this same model, the amount of variance that was accounted for in past 12-month distress and suicidality increased to 21% (ΔR^2 = .204, p < .001) and the relationship between home challenges and suicidality became nonsignificant (β = .05, t(171) = .76, p = .45). Sense of coherence, however, was significant in the model and showed a negative effect on past 12-month distress and suicidality (β = -.47, t(171) = -6.81, p < .001), meaning that as sense of coherence goes up, level of distress and suicidality goes down. To further explore this finding, a regression analysis was performed to examine the relationship between home challenges and sense of coherence. Findings indicated that home challenges was significantly and negatively related to level of sense of coherence (β = -.18, t(173) = -2.40, p = .018), and that together, with control variables, home challenges accounted for nearly 5% of the variance in sense of coherence scores (R^2 = .047, p = .031). More specifically, results indicated that as level of home challenges went up, one was more likely to have a lower level of sense of coherence. These findings may help

explain why the hypothesized moderating effect of sense of coherence on the relationship between home challenges and past 12-month distress and suicidality was not found.

Next, a second multiple regression analysis was performed to examine the moderating effect of sense of coherence on the relationship between experience of abuse (scores ranging from 1-10) and past 12-month distress and suicidality, while controlling for age, gender, sexual orientation, religion, socioeconomic status, and college standing. Sense of coherence, abuse, and the control variables were entered in the first step of the regression analysis (model 1). In the second step of the regression analysis, the interaction term between sense of coherence and abuse was entered (model 2). Results show that model 1 is significant, accounting for 17% of the variance in past 12-month distress and suicidality scores, $R^2 = .17$, $F(8, 112) = 4.06$, $p < .001$. Model 2, which includes the interaction term, was also significant, $R^2 = .16$, $F(9, 111) = 3.59$, $p = .001$. However, model 2 did not account for significantly more variance in past 12-month distress and suicidality than model 1 ($\Delta R^2 = .001$, $p = .75$) and the sense of coherence and abuse interaction term was not significant, $\beta = .04$, $t(111) = .32$, $p = .75$. Therefore, sense of coherence was not shown to significantly moderate the relationship between abuse and past 12-month distress and suicidality. Despite the nonsignificant interaction term, model 2 remains significant, explaining 16% of the variance in past 12-month distress and suicidality; this result is due to the significant effect found for sense of coherence. More specifically, model 2 showed that sense of coherence significantly predicted past 12-month distress and suicidality ($\beta = -.45$, $t(111) = -3.5$, $p = .001$), while the relationship between abuse and suicidality became nonsignificant ($\beta = .10$, $t(111) = 1.01$, $p = .32$).

Again, results from research question five showed that, together, abuse (scores ranging from 0-10) and control variables (age, gender, sexual orientation, religion, socioeconomic status,

college standing) accounted for approximately 3% of the variance in past 12-month distress and suicidality and there was a significant relationship between abuse and suicidality. However, when sense of coherence was added to this model, the amount of variance that was accounted for in past 12-month distress and suicidality increased to 22% ($\Delta R^2 = .198$, $p < .001$) and the relationship between abuse and suicidality became nonsignificant ($\beta = .06$, $t(174) = .83$, $p = .41$). Sense of coherence, however, was significant in the model and showed a negative effect on past 12-Month distress and suicidality ($\beta = -.47$, $t(174) = -6.81$, $p < .001$). To further explore this this finding, a regression analysis was performed to examine the relationship between abuse and sense of coherence. Findings indicated that abuse was significantly related to level of sense of coherence ($\beta = -.26$, $t(176) = -3.52$, $p = .001$), and that together with control variables, abuse accounted for nearly 8% of the variance in sense of coherence scores ($R^2 = .079$, $p = .003$). More specifically, these results indicated that as level of abuse went up, scores on sense of coherence decreased. As previously noted, these findings may help explain why the hypothesized moderating effect of sense of coherence on the relationship between home challenges and past 12-month distress and suicidality was not found.

Research question 7: Controlling for gender, age, sexual orientation, religion, socioeconomic status, and college standing, does a participant's identification as AI/AN differently impact how sense of coherence moderates the relationship between acquired vulnerability and past 12-month distress and suicidality explored in research question six?

Analysis and results. Three-way multiple linear regression analyses were performed to examine if a moderating effect of sense of coherence, on the relationship between acquired vulnerability (home challenges and abuse) and past 12-month distress and suicidality, differed depending on race/ethnicity, while controlling for age, gender, sexual orientation, religion,

socioeconomic status, and college standing. Participants who scored greater or equal to one on the ACEs home challenges and abuse subscales were included in the following analyses. First, a three-way multiple regression analysis was performed on the total sample, including participants of all races, with ethnicity added as an additional moderator to the two-way interaction term of the previous model for research question six. As such, sense of coherence, home challenges, ethnicity, and the control variables were entered in the first step of the regression analysis. In the second step of the regression analysis, the interaction term between sense of coherence and home challenges was entered, and finally, to assess whether sense of coherence operates similarly among AI/ANs as other racial and ethnic groups, the interaction term between sense of coherence, home challenges, and ethnicity was entered into the third step of the regression analysis. Results showed that the three-way interaction of sense of coherence, home challenges, and ethnicity, was not significant (β = -.01, t(5830) = -.63, p = .53) and did not significantly impact the amount of variance in past 12-month distress and suicidality scores accounted for in previous models (ΔR^2 < .001, p = .53). Therefore, identification as AI/AN did not significantly impact whether sense of coherence moderates the relationship between home challenges and past 12-month distress and suicidality.

Next, to examine if a moderating effect of sense of coherence, on the relationship between abuse and past 12-month distress and suicidality, differed depending on race/ethnicity, a second three-way multiple regression analysis was performed with ethnicity added as an additional moderator to the two-way interaction term of the previous model for research question six. As such, sense of coherence, abuse, ethnicity, and the control variables were entered in the first step of the regression analysis. In the second step of the regression analysis, the interaction term between sense of coherence and abuse was entered, and finally, to assess whether sense of

coherence operates similarly among AI/ANs as other racial and ethnic groups, the interaction term between sense of coherence, abuse, and ethnicity was entered in the third step of the regression analysis. Results showed that the three-way interaction of sense of coherence, abuse, and ethnicity, was not significant ($\beta = .01$, $t(4727) = .84$, $p = .40$) and did not significantly impact the amount of variance in past 12-month distress and suicidality scores accounted for in previous models ($\Delta R^2 < .001$, $p = .40$). Therefore, identification as AI/AN did not significantly impact whether sense of coherence moderates the relationship between abuse and past 12-month distress and suicidality. Overall, these three-way interaction analyses showed that sense of coherence operated similarly in the relationship between acquired vulnerability and past 12-month distress and suicidality among AI/AN participants as it did for participants of other races. This finding helps validate the use of the sense of coherence scale among AI/ANs, despite potential cultural differences that may exist among this subsample of participants.

Research question 8: Controlling for age, gender, sexual orientation, religion, socioeconomic status, and college standing, does mental health, as measured by the MHC-SF, significantly moderate the relationship between acquired vulnerability to distress and suicidality and past 12-month distress and suicidality among AI/AN participants?

Analysis and results. Multiple linear regression analyses were performed to examine mental health as a moderator of the relationship between acquired vulnerability and distress and suicidality among AI/AN participants. Participants who scored greater or equal to one on the ACEs home challenges and abuse subscales were included in the following analyses. First, a multiple regression analysis was performed examine the moderating effect of mental health and home challenges, while controlling for age, gender, sexual orientation, religion, socioeconomic status, and college standing. mental health, home challenges, and the control variables were

entered in the first step of the regression analysis (model 1). In the second step of the regression analysis, the interaction term between mental health and home challenges was entered (model 2). Results show that model 1 is significant, accounting for approximately 8% of the variance in past 12-month distress and suicidality scores, $R^2 = .076$, $F(8, 130) = 2.43$, $p = .018$. Model 2, which includes the added interaction term is also significant, $R^2 = .073$, $F(9, 129) = 2.20$, $p = .03$. However, model 2 does not account for significantly more variance in past 12-month distress and suicidality scores than model 1 ($\Delta R^2 = .003$, $p = .49$) and the mental health and home challenges interaction term was not significant, $\beta = -.07$, $t(129) = -.70$, $p = .49$. Therefore, mental health was not shown to significantly moderate the relationship between home challenges and past 12-month distress and suicidality. Despite the nonsignificant interaction term, model 2 remains significant, explaining 7% of the variance in past 12-month distress and suicidality; this result is due to the significant effect found for mental health. More specifically, model 2 showed that mental health significantly predicted past 12-month distress and suicidality scores ($\beta = -.22$, $t(129) = -2.15$, $p = .03$), while the relationship between home challenges and suicidality became nonsignificant ($\beta = .04$, $t(129) = .47$, $p = .64$).

Next, a second multiple regression analysis was performed to examine the moderating effect of mental health and abuse, while controlling for age, gender, sexual orientation, religion, socioeconomic status, and college standing. Mental health, abuse, and the control variables were entered in the first step of the regression analysis (model 1). In the second step of the regression analysis, the interaction term between mental health and abuse was entered (model 2). Results show that model 1 is significant, accounting for 8% of the variance in past 12-month distress and suicidality scores, $R^2 = .08$, $F(8, 111) = 2.35$, $p = .02$. Model 2, which includes the added interaction term is also significant, $R^2 = .08$, $F(9, 110) = 2.13$, $p = .03$. However, model 2 does

not account for significantly more variance in past 12-month distress and suicidality scores than model 1 (ΔR^2 = .004, p = .50) and the mental health and abuse interaction term was not significant (β = -.09, t(110) = -.68, p = .50). Therefore, mental health was not shown to significantly moderate the relationship between abuse and past 12-month distress and suicidality. Despite the nonsignificant interaction term, the regression model remains significant, explaining 8% of the variance in past 12-month distress and Suicidality; this result is due to the significant effect found for mental health. More specifically, mental health was significantly related to past 12-month distress and suicidality scores (β = -.27, t(111) = -3.04, p = .003), while the relationship between abuse and suicidality became nonsignificant (β = .13, t(111) = 1.39, p = .17).

Chapter 5: Discussion

American Indian and Alaska Native young adult populations consistently experience the highest rate of suicide of all demographic groups in the United States (CDC, 2015). However, research focusing on AI/AN suicide has failed to move beyond descriptive and epidemiological analysis. There are few empirical studies specifically focused on identifying malleable psychological constructs that are capable of influence and that can be targeted or intervened upon among AI/ANs to reduce their disparities in suicide. Additionally, the majority of studies that examine AI/AN suicide have been reservation-based, although nearly two thirds of AI/ANs live in urban areas. As such, little is known regarding patterns of suicide among this unique subset of the AI/AN population, including what precipitating and protective factors have influence. American Indians and Alaska Natives are also largely ignored as a subgroup in research focusing on college student mental health and suicide, despite this being a burgeoning field of literature, and despite the growing number of AI/AN young people in the higher education system.

Research on college student suicide is experiencing a shift in focus; rather than fixating on crisis intervention among at-risk students, campuses are now dedicating more energy and resources to developing population-based approaches to prevention, which include bolstering protective factors among an entire student body. To be effective on a broad level, prevention programming and mental health services must be culturally relevant to the student population. As such, a lack of focus on AI/AN college students in the existing research leaves this often-marginalized group out of consideration. American Indians and Alaska Natives have long experienced a trend of being treated as insignificant and peripheral by the dominant U.S. society and culture. The limitations of suicide research among urban-based AI/ANs is one small but important example of the systemic oppression that thwarts this population's ability to thrive. The current study attempts to confront these issues and move beyond the limitations of previous research by exploring the experiences of this neglected group.

The current study explored the presence of vulnerability and suicidality among an urban-based AI/AN college student sample, and examined the relationship between these variables using Antonovsky's salutogenic paradigm. According to the salutogenic paradigm, a focus on the origin of health, rather than the origin of disease, allows for a better understanding of why some individuals develop disease and others do not. As such, in addition to exploring the experience of suicidality among urban-based AI/ANs, the current study also sought to identify protective qualities and sources of resilience that aid in adaptive coping, despite one's acquired risk. More specifically, Antonovsky's (1987) sense of coherence and Keyes' (2005) mental health constructs were examined in their relationship to acquired vulnerability and distress and suicidality. Sense of coherence and mental health both represent global measures of well-being and reflect an individual's sense of self, or how one perceives themselves in relationship to

others and the world around them. Theory posits that both of these constructs are protective in nature; allowing for an individual to utilize adaptive coping strategies in the face of stressful life events (Antonovsky, 1997; Keyes, 2007).

As hypothesized, the current study found that AI/AN urban-based college students demonstrated higher rates of vulnerability, including exposure to home challenges and abuse, as well as higher rates of distress and suicidality as compared to participants of other races. Additionally, it was found that exposure to home challenges and abuse were both significantly predictive of distress and suicidality among the subsample of urban-based AI/ANs—as vulnerability increased among these participants, so too did level of distress and suicidality. The protective nature of sense of coherence and mental health were examined in the current study by exploring whether these variables moderated the relationship between acquired vulnerability and distress and suicidality found among AI/AN participants. Interestingly, results indicated that neither construct significantly moderated this relationship, however, sense of coherence was found to have a strong direct effect on one's past 12-month distress and suicidality, with higher sense of coherence predicting lower distress and suicidality. Overall, several of the research hypotheses posed by the current study were confirmed; additionally, findings related to the protective nature of sense of coherence and mental health, while nonsignificant, revealed important information that suggests that these constructs may operate in a different way than was hypothesized on the relationship between acquired vulnerability and distress and suicidality. This chapter includes a thorough discussion of these study findings as they relate to existing research and future implications. Additionally, the contributions and limitations of this study are examined and directions for future research are explored.

Exploring Vulnerability, Distress, and Suicidality Among Urban-Based AI/ANs

The first aim of the current study explored the presence of known risk factors (acquired vulnerability) and past 12-month distress and suicidality among urban-based AI/AN college students. Additionally, comparisons were made between AI/AN participants and participants of other races to determine the extent to which racial disparities exist among these variables. The relationship between acquired vulnerability and suicidality was also examined to determine whether established risk factors were predictive of distress and suicidality among the current study's urban-based AI/AN participants.

Acquired vulnerability. American Indian and Alaska Native participants reported significantly higher rates of acquired vulnerability, including home challenges and abuse, compared to participants of other races. American Indian and Alaska Native participants reported significantly higher rates of all but one of the six ACEs home challenges categories. More specifically, before the age of 18, AI/AN participants were significantly more likely to have lived in a household with someone who was mentally ill or suicidal; abused illegal drugs or prescriptions; or served time in jail or prison. Additionally, they were significantly more likely to have had divorced or separated parents and to have witnessed violence between adults in their home. These experiences tend to occur in clusters and are often inter-related (Bjorkenstam, Kosidou, & Bjorkenstam, 2017). Therefore, having increased rates of one home challenge increases the chance of exposure to others. This clustering effect helps explain why rates of home challenges were found to be higher among AI/AN participants in nearly all ACEs categories. Importantly, growing up with a number of familial and environmental stressors has been established as a risk factor for suicide, and research has shown that suicidal risk increases as number of indicators accumulate (Dube, Anda, Felitti, Chapman, Williamson, & Giles, 2001; Bjorkenstam, Kosidou, & Bjorkenstam, 2016). As previously outlined, increased rates of

domestic violence, substance abuse, family turmoil, and resulting mental illnesses are often found in impoverished communities and among individuals with fewer resources and less access to support and services. Unfortunately, due to a history of a severely oppressive political context, AI/ANs have long experienced increased exposure to the specific categories of household dysfunction as measured by the ACEs. These experiences tend to go hand-in-hand, thus producing a cumulative risk for suicide that is much greater among AI/AN populations.

American Indian and Alaska Native participants also reported significantly higher rates of abuse compared to participants of other races. Previous research has shown that American Indians and Alaska Natives suffer exposure to childhood abuse at rates that are higher than any other race in the United States (Dorgan, et al., 2014). Results from the current study offer no exception, with AI/AN participants reporting rates of abuse before the age of 18 that are disproportionately higher than those of participants of other races. More specifically, compared to participants of other races, AI/AN participants were 1.5 times more likely to have experienced physical abuse by a parent or caregiver, 1.5 times more likely to have been touched sexually by an adult or someone at least five years older than them; over 2.5 times more likely to have been forced to sexually touch an adult or someone at least five years older, and three times more likely to have been forced to have sex with an adult or someone at least five years older. The experience of abuse can have a devastating impact on one's mental health and well-being. Research has shown a strong association between childhood abuse and subsequent mental health disorders, especially depression and PTSD (Kendler et al., 2000; Campbell, 2002). Importantly, the anger and impulsivity often associated with PTSD has been identified as a strong predictor of suicide attempts and completed suicides among individuals with this diagnosis. While the current

study did not assess for specific psychiatric disorders, the association between childhood abuse and distress and suicidality among AI/AN participants was confirmed.

Past 12-month distress and suicidality. American Indian and Alaska Native participants also endorsed significantly higher rates of past 12-month distress and suicidality compared to participants of other races. More specifically, AI/AN participants reported significantly higher scores on the Distress and Suicidality Continuum and were more likely to have attempted suicide compared to participants of other races. In fact, AI/AN participants were nearly three times more likely to have attempted suicide in the past 12 months than other participants, despite there being no significant difference in whether they "seriously considered suicide" during this same timeframe. This finding is important as it demonstrates that AI/AN college students in the current study were more likely to act on their suicidal thoughts compared to students of other races.

Findings from the current study indicated a significant and positive relationship exists between acquired vulnerability and suicidality among urban-based AI/AN college students. Results showed that rate of exposure to home challenges and abuse significantly predicted participants' level of past 12-month distress and suicidality; participants with higher rates of acquired vulnerability were significantly more likely to have experienced heighted distress and suicidality. These findings demonstrate that urban-based AI/ANs experience similar patterns of vulnerability and suicidality, in response to home challenges and abuse, as has been found among those living in rural areas or on reservations. Importantly, AI/ANs are more likely to be poorer, less educated, less employed, and less healthy than any other demographic group in the United States, regardless of where they live (Gone & Trimble, 2012; Ogunwole, 2006; US Census Bureau, 2013). These conditions are closely associated with the presence of suicide risk

factors measured by the ACEs, which helps explain the racial differences found among acquired vulnerability to suicide and past 12-month distress and suicidality.

In the last several decades, the migration of AI/ANs from rural to urban areas has mirrored the pattern of migration seen among millions of African Americans in the 20th century, who moved from rural southern areas to metropolitan areas (Williams, 2013). For AI/ANs, this transition is often made in an attempt to escape the poverty that is prevalent on reservations. The federal government has encouraged this relocation by offering incentives such as job training programs (Aragon, 2006). However, transitioning to an urban environment has proved difficult for AI/AN migrants; services and resources, including those promised by the government, are difficult to obtain. Additionally, AI/AN migrants are likely to lack education and specialized skills (Aragon, 2006). As such, urban-based AI/ANs have experienced difficulty finding jobs and escaping poverty. Census data shows that 27% of all AI/ANs live in poverty (US Census Bureau, 2013). Moreover, data has shown that many urban-based AI/ANs experience levels of poverty that rival those in the nation's poorest reservations (Williams, 2013). For instance, nearly 30% of AI/ANs live in poverty in Chicago, Oklahoma City, Houston, and New York, while 45-50% live in poverty in Rapid City (South Dakota) and Minneapolis (US Census Bureau, 2013). Unfortunately, federal money and programming for AI/ANs has not followed this migration pattern; the Urban Indian Health Institute, a division of Indian Health Services (IHS) that supports urban-based AI/ANs, only receives approximately 1% of the IHS budget. This lack of funding severely limits access to resources and programming that are designed to benefit and support the underserved AI/AN population (Urban Indian Health Institute, 2012). The continued social and economic marginalization of urban-based AI/ANs ultimately leads to heightened exposure to various risk factors and increased vulnerability for suicide among this population.

The current study demonstrates that this trend remains true among a sample of AI/AN college students as well, who may be assumed to have access to more resources, more education, and more support. While the migration patterns—from reservation to metropolitan areas—have been well documented, the impact of poverty and oppression on urban-based AI/ANs has not been strongly established as it has in various reservation-based communities. Findings from the current study provide evidence that a move off the reservation does not, in and of itself, provide relief from a disadvantaged and vulnerable lifestyle. This type of evidence is necessary for continued efforts aimed at increasing IHS funding in urban areas.

Interestingly, findings from the current study revealed mixed results regarding the relationship between acquired vulnerability and distress and suicidality. As noted, results confirmed the hypothesized presence of a significant relationship between acquired vulnerability (including home challenges and abuse) and the experience of distress and suicidality. However, the lack of significance among certain control variables in their relationship to distress and suicidality is inconsistent with previous research. For instance, the risk of suicide among AI/ANs has been shown to peak during early adulthood (ages 15-24) and then decrease significantly as individuals enter their late 20s and early 30s (Suicide Prevention Resource Center, 2011). As such, it could be expected that older AI/AN students would have lower levels of distress and suicidality compared to younger AI/AN students. Results, however, showed that age did not significantly impact the development of distress and suicidality among AI/AN participants when acquired vulnerability was controlled for. In other words, the influence of one's age on their development of distress and suicidality was far less important (and nonsignificant) when experiences of home challenges and abuse were considered. Similarly, the influence of sexual orientation and religiosity on distress and suicidality became nonsignificant when acquired

vulnerability was controlled for. However, previous research has established sexual orientation as an important suicide risk factor, with LGBT AI/ANs experiencing significantly higher rates of suicide deaths, attempts, and ideation than heterosexual AI/ANs (Balestrery, 2012). Additionally, research has shown that religious identification can protect against the development of mental illness and suicidality (Nelson et al., 2012). Importantly, these variables proved to be unrelated to participants' experience of past 12-month distress and suicidality when acquired vulnerability was taken into account. As Freedenthal and Stiffman (2004) have suggested, urban-based AI/ANs may have different risk factors for suicidal ideation and behavior compared to reservation-based AI/ANs and compared to the general U.S. population. The current results provide important and useful information regarding who may experience heightened suicidal risk among an urban-based AI/AN population, specifically among AI/AN college students. Although further exploration is needed to replicate and confirm these findings, the current results offer important considerations regarding risk assessment and targeted outreach efforts among AI/AN students.

Exploring Sense of Coherence and Mental Health

Identifying the presence of risk factors and their association with suicidality is an important first step in understanding the elevated rates of suicide among AI/AN young people. As previously noted, many of the risk factors that have been most closely linked to suicidality include things such as adverse childhood experiences, including exposure to household stressors and abuse (Ford et al., 2014; Ponnet et al., 2005; Adam, Bouchkoms, & Streiner, 1982; Stein et al., 2010). Unfortunately, by early adulthood, many AI/ANs will have already acquired a vulnerability to suicide resulting from these types of childhood experiences. Therefore, to mitigate the occurrence of distress and suicidality among this population, it becomes imperative

that researchers begin investigating the mechanisms through which acquired vulnerability affects the development of suicidal thinking and behavior. This would allow for intervention along the critical pathways that maintain the relationship between these variables. Therefore, the second aim of the current study was to identify malleable psychological factors that have the potential to protect one from developing suicidal thoughts in reaction to stressful life events. As such, efforts aimed at suicide prevention, either on an individual or population-based level, can thwart the development of suicidal thoughts and behavior by bolstering these protective psychological factors and creating a pathway to well-being.

Findings from the current study indicate that there were no significant differences based on ethnicity in level of sense of coherence or mental health, meaning AI/AN participants did not report significantly lower scores on these measures. Importantly, the current sample is comprised of college students and attending college may be a protective factor against suicide; the suicide rate among college students is nearly half that of nonstudent peers (Iarovici, 2015). In addition to the external resources available through one's institution, entrance into the higher education system indicates that one is likely to possess a plethora of internal resources as well. Possession of internal and external resources increases the chance that an individual will experience high sense of coherence and mental health, and that these positive states of self will be protective in the face of various life challenges (Antonovsky, 1987; Keyes, 2002).

Protective nature of sense of coherence. Interestingly, findings from the current study indicated that sense of coherence and mental health did not significantly moderate the relationship between acquired vulnerability and past 12-month distress and suicidality among AI/AN participants. Results from the moderation analysis indicated, however, that sense of coherence had a strong direct effect on participants' level of distress and suicidality. This finding

suggests that exposure to home challenges and abuse during childhood can have a devastating impact on one's ability to cope successfully with challenges later in life. As such, individuals with heightened vulnerability are at greater risk of progressing from distressed to suicidal thinking when met with such challenges.

Despite the nonsignificant moderation findings related to sense of coherence, the series of analyses completed for the current study produced a pattern of results that were suggestive of an underlying mediation, responsible for the relationships between key variables among AI/AN participants. For instance, analyses first demonstrated a significant and positive relationship between acquired vulnerability and past 12-month distress and suicidality, where higher rates of home challenges and abuse were predictive of higher rates of distress and suicidality. When sense of coherence was then entered into these regression models, results showed a significant negative relationship between sense of coherence and past 12-month distress and suicidality, with higher sense of coherence scores predicting lower distress and suicidality scores. Importantly, however, the previously significant effects of home challenges and abuse on distress and suicidality became nonsignificant when sense of coherence was added to these models. Additionally, adding sense of coherence to the regression models contributed to a substantial and significant increase in variance accounted for in past 12-month distress and suicidality. More specifically, when sense of coherence was added to the model with home challenges and control variables, the variance accounted for in distress and suicidality scores increased from 1% to 21%; and when added to the model with abuse, the variance accounted for increased from 2% to 22%. Follow up analyses were performed to gain further clarity on the role of sense of coherence in the relationship between acquired vulnerability and distress and suicidality among AI/AN participants. Results indicated both home challenges and abuse were significantly related to

sense of coherence, with higher rates of vulnerability leading to lower levels of sense of coherence.

These additional results indicate that sense of coherence had a fundamental role in the development of distress and suicidality among AI/AN participants, though not by protecting one from acquired vulnerability as originally hypothesized. Instead, findings suggest that sense of coherence was operating as a mediator, rather than a moderator, in the relationship between acquired vulnerability and distress and suicidality (Baron & Kenney, 1986). In fact, support for full mediation was found using Baron and Kenny's (1986) four-step model mediation model. In the first step, acquired vulnerability was found to significantly predict distress and suicidality; in the second step, acquired vulnerability was shown to significantly predict sense of coherence; in the third step, sense of coherence was found to significantly predict distress and suicidality; and finally, in the fourth step, the relationship between acquired vulnerability on distress and suicidality became nonsignificant when sense of coherence was added to the model (see Figure 2). In this case, results suggest that sense of coherence may be a mechanism through which acquired vulnerability impacted distress and suicidality among AI/AN participants. This means that exposure to vulnerabilities negatively impacts one's psychological well-being and sense of self, thus thwarting one's access to adaptive coping in the face of difficult life challenges, thereby putting them at greater risk for distress and suicidality. Conversely, those with less acquired vulnerability are more likely to demonstrate a greater sense of coherence, making them more apt to cope successfully with such challenges. Of note, results showed that the higher one's sense of coherence, the less likely they were to experience distress and suicidality. Therefore, as a mediator, sense of coherence does operate as a protective quality.

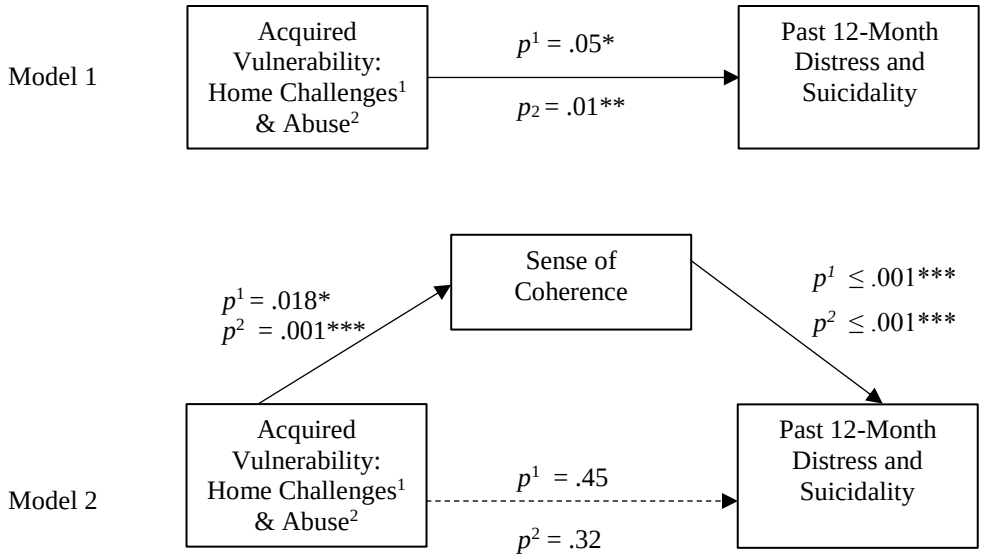

Figure 2. Sense of coherence as a mediator. Models 1 and 2 show change in relationship between acquired vulnerability and past 12-month distress and suicidality when sense of coherence is added to the model. Results show that sense of coherence mediates the relationship between vulnerability and suicidality.

Importantly, this mediation model produced results that seem to conflict with findings from previous research questions. For instance, AI/AN participants endorsed significantly higher rates of acquired vulnerability, yet they showed no significant difference in sense of coherence scores compared to participants of other races. Additionally, despite there being no significant difference in sense of coherence between the two subsamples, AI/ANs showed significantly higher rates of distress and suicidality. These discrepancies highlight the complex nature of these relationships. More specifically, these discrepancies indicate that there are other variables, unaccounted for in the current study, that have influence on the demonstrated relationships between acquired vulnerability and sense of coherence; and sense of coherence and distress and suicidality. The importance of these unaccounted-for variables is clear—despite heightened levels of vulnerability, the developmental pathway to sense of coherence was somehow preserved among AI/AN participants. In other words, sense of coherence was achieved, undeterred by home challenges and abuse, possibly due to the protective qualities of some other

resources. This is in line with Antonovsky's assertion that Generalized Resistance Resources (GRRs) are responsible for the development and maintenance of sense of coherence, and that access to such resources allows sense of coherence to develop even in the face of adversity. Although further research is necessary to fully explore and unpack this pathway, this finding is important as it provides evidence that, even in the face of unchangeable risk, one is still capable of developing a strong sense of coherence, which is ultimately protective from distress and suicidality. Establishing that such advancement is possible, even among participants with substantial risk, offers hope that protective factors can be strengthened, and patterns of suicide changed, among urban-based AI/ANs. Important to note, however, is that although sense of coherence operated as the mechanism through which acquired vulnerability affected distress and suicidality, other unaccounted-for variables appear to have an important influence in how sense of coherence affects level of distress and suicidality among AI/AN participants. For instance, despite having similar rates of sense of coherence compared to participants of other races, AI/ANs had significantly higher rates of distress and suicidality, indicating that the protective pathway between sense of coherence and distress and suicidality was negatively impacted by some disruptive quality. Ultimately, identifying the unaccounted-for variables that are impacting the described pathways will garner information that is imperative to the success of prevention efforts among this unique population.

Implications

Existing literature on American Indian and Alaska Native suicide is relatively limited and is often characterized by descriptive studies of small tribal communities. There are numerous barriers that limit the advancement of this research, including difficulties in sampling and generalizing findings from the diverse groups that make up the AI/AN population (Sarche &

Spicer, 2008). Currently, the overwhelming majority of AI/ANs are living in urban areas, however, this subset of the population remains absent and ignored throughout existing literature. More specifically, epidemiological data related to social and environmental issues among urban-based AI/ANs is lacking, and studies on the mental health conditions of these populations are virtually nonexistent (Clark, 2006; Aragon, 2006). This type of information is required, however, to understand and better serve these individuals. The findings of this study help to shed light on the experiences of urban-based AI/ANs and provide groundwork for continued inquiry. For instance, the findings of the current study demonstrate that urban-based AI/ANs share some similar correlates to suicidal behavior as reservation-based individuals and they are exposed to these suicide risk factors at disproportionately high rates compared to other racial and ethnic groups. Additionally, urban-based AI/ANs have higher rates of suicidality despite possessing similar levels of sense of coherence—a construct found to be protective of suicidality in previous research. Importantly, however, the ability to cultivate a sense of coherence, despite increased adversity, is evidence of the resilience and fortitude that exists among this disenfranchised population. The resilience among urban-based AI/ANs can ultimately be capitalized upon to strengthen their position in society.

Together, the findings of the current study hold several implications, many of which can inform future research, practice, and policy. Most importantly, the extent to which urban-based AI/ANs are suffering in the dominant culture must be recognized and acknowledged. The results of this study demonstrate that this remains true even among a more resourced sample. The ability of researchers and clinicians to implement culturally appropriate methods of inquiry and intervention among this population is negatively impacted by the tendency to stereotype and misclassify this population. For instance, in research, AI/ANs are typically collapsed into an

"other" category due to their small proportion in study samples (Clark, 2006). This misclassification leaves AI/ANs silenced and ignored. However—like all people—they are unique and important, despite their limited presence. Additionally, AI/ANs are often reluctant to seek support from non-Native psychologists as these providers are often perceived as unresponsive to the unique needs of their Native clients and are likely to project values of the dominant culture during attempts at intervention (Clark, 2006). Findings from the current study give voice to the muted experience of urban-based AI/ANs that is not typically found in research. Additionally, results provide information regarding important considerations for providers who seek to strengthen and support this community. For instance, the extent to which urban AI/ANs face consequences of historical and structural inequalities should be considered in the conceptualization of mental illness and suicidality among this population, as these individuals were found to experience heightened exposure to various adversities. Additionally, attempts at intervention should be grounded in culturally relevant research, such as exploring and developing one's sense of coherence, found in the current study to be highly predictive of distress and suicidality.

A continued focus on suicide among urban-based AI/ANs is imperative. Currently, the IHS only allocates approximately 1% of its annual budget to urban-based health programs. The current study shows that AI/AN young people living in urban areas experience similar rates of home challenges, abuse, and suicidality as those living on reservations. Importantly, the participants in the current sample are college students and, therefore, possess some unique protection. However, they still demonstrate levels of risk and suicidality that are on par with those from certain reservations where rates are highly elevated. Therefore, addressing the experiences of this population must be made a priority by programming and policy efforts. Once

protective factors are better identified, programs that target improved access to culturally appropriate resources and protective qualities should be established and implemented in urban areas or schools with high proportions of AI/ANs. Additionally, as the AI/AN population continues to migrate to various metropolitan areas, clinicians, both in the community and on college campuses, should be prepared to address trauma, distress, and suicide in culturally appropriate ways with AI/AN clients. In cases where crisis intervention is required, clinicians must practice cultural competence by considering the systemic nature of risk and suicide among AI/AN populations.

The findings of the current study can be used to guide clinical implications both at individual and population-based levels. For instance, results showed that one's sense of coherence can develop even in the face of adverse experiences and despite the presence of risk. Therefore, outreach efforts on college campuses could target AI/AN students through culturally sensitive programming focused on bolstering the resources that may increase their sense of coherence. Importantly, population-based outreach on college campuses can be utilized to support AI/AN students who may not be seen in in their university's counseling center.

Unfortunately, the current study was unable to verify the theorized components of sense of coherence (comprehensibility, manageability, meaning in life), therefore, the current study was unable to offer specific recommendations on how to bolster AI/AN students' sense of coherence. However, salutogenesis—focusing on the origin of health—can be understood within a broader context than just sense of coherence. For instance, anything that aids in the development or maintenance of health and well-being can be considered a salutogenic element. For instance, variables such as connectedness, locus of control, attachment, self-efficacy, and resilience are all positive resources that may contribute to one's sense of well-being and protect

against distress and suicidality. College campuses can focus on bolstering culturally appropriate resources among AI/AN students, such as ethnic identity and a sense of belonging, in an attempt to foster important protective qualities. Additionally, campuses should consider the increased rates of childhood abuse and its relationship to distress and suicidality among AI/AN students and implement programming designed to support those who have experienced adverse childhood experiences. For instance, implementing programming that raises awareness about violence and sexual assault could help survivors of childhood abuse develop effective coping skills that may prevent them from progressing from distressed to suicidal thinking during difficult times. This could include providing students with education on consent and healthy relationships in addition to making them aware of campus resources that are available for survivors, such as counseling services.

Importantly, counseling center resources provided to AI/AN students need to be culturally sensitive. Findings from the current study offer several implications for providing more direct clinical services to AI/AN students. For instance, it is important for clinicians working with AI/AN students to be aware of their increased rate of adverse childhood experiences and suicidal ideation. Using a trauma-informed approach to care when working with AI/AN students may help survivors of abuse rebuild a sense of control and empowerment. This type of practice is grounded in a strengths-based framework, and when used with AI/AN survivors, can help build understanding regarding the impact of trauma on their physical, psychological, and emotional safety (Blue Knot Foundation, 2017). A strengths-based approach to treating trauma may include using resilience-informed therapy that integrates biopsychosocial interventions to help survivors build confidence in their capacity for healing and help them feel empowered to take an active role in this process. In working with AI/AN students, this may

include focusing not only on helping clients process uncomfortable emotions, but it may also emphasize an understanding of the impact of unresolved PTSD on physical health, thus lending focus to the mind-body connection, which is often valued as an important part of AI/AN culture and views on well-being. Considering the value of the mind-body connection in treatment planning with AI/AN students is just one example of how trauma can be approached in therapy by using one's inherent strengths as a launching point from which to seek growth and change.

Additionally, clinicians should consider that AI/AN students may be more likely to attempt suicide compared to students of other races, even when they are not reporting an increased rate of serious suicidal ideation. It is imperative that providers be mindful of this when working with AI/AN students and be thorough in their risk assessment or safety planning when students endorse any suicidal ideation. In order to address AI/AN student suicidality in a more culturally responsive way, clinicians should consider using the Collaborative Assessment of Management of Suicidality (CAMS), which is an approach to assessing suicidal risk that emphasizes collaboration between client and clinician (Jobes, 2017). American Indian and Alaska Native students may be reluctant to seek help from providers at their university counseling center due to the history of mistreatment among AI/AN populations by Western providers. As such, when working with AI/AN students, it is imperative for clinicians to be mindful of the historical trauma faced by AI/AN populations throughout our country's history and to be collaborative in their approach to mental health care with AI/AN clients. The CAMS framework is a clinical philosophy of care that provides a flexible approach to risk assessment that can be used across theoretical orientations and disciplines for a wide range of suicidal patients. Using the CAMS, a clinician engages the client in the development of their own treatment plan. Every session using the CAMS intentionally involves the client's input about

what is working and what is not. An essential component of the CAMS philosophy is that clinicians demonstrate honesty and respectfulness while attempting to understand the client's suffering from a client-centered perspective (Jobes, 2017). The CAMS approach is a way of talking about suicidal ideation and risk that may be less threatening to AI/AN students as it focuses on breaking down the power differential inherent in the therapeutic relationship.

Limitations

While the present study has made several contributions to the knowledge surrounding vulnerability and suicide among urban-based AI/ANs, there are certain limitations that are important to address. First, the measures used in this study to assess for acquired vulnerability to distress and suicidality, sense of coherence, mental health, and past 12-month distress and suicidality are all self-report in nature. Self-report studies are inherently limited as they are dependent upon the respondent's ability to answer questions honestly and accurately. Acquired vulnerability and sense of coherence are both measured using Likert-scale response options. Past research has shown that several factors can influence subjective responses to measures that use Likert scales, including question wording and context, language abilities, and reference group effects (Schuman & Presser, 1981; Schwarz, 1999; Heine, Lehman, Peng, & Greenholtz, 2002). Additionally, the distress and suicidality continuum asks respondents to report whether they experienced certain thoughts and feelings at any time during the past twelve months. Asking participants to reflect over an extended period allows for the possibility of inaccurate representation of thoughts and feelings they may have experienced during this time.

A second limitation to the current study lies in the generalizability of results. Participants in this study were limited to AI/AN college students since the sample was drawn from a larger national sample of college students. Therefore, results from this study may not generalize to

AI/AN individuals who are not college students. Being a college student has been shown to be a protective factor for those who possess suicidal risk (Schwartz, 2011). This may impact generalizability of results as it can be assumed that for one to enter higher education, one must possess a plethora of internal and external resources. The current sample of AI/AN participants possessed higher levels of sense of coherence than what might be true among AI/ANs who are not in college. Importantly, results showed that despite higher rates of acquired vulnerability, AI/AN participants had similar levels of sense of coherence as compared to participants of other races. As previously mentioned, it is likely that access to various resources allowed for the development of sense of coherence despite exposure to heightened risk. Therefore, applicability of the current findings may be limited to a more resourced sample.

A third limitation of the current study was that the Sense of Coherence Scale did not show strong psychometric properties with the current sample. Specifically, factor analyses on the SOC-13 showed that there was no clear factor structure for the scale. As such, findings focused on sense of coherence were limited to describing participants' global sense of coherence, rather than being able to describe and examine the three theorized components including comprehensibility, manageability, and meaning in life. Previous research has shown varied results regarding the validity of the SOC-13. However, results consistently demonstrate the importance of the construct in its relationship to health and well-being. Importantly, Antonovsky (1987) warned against the attempt to break the Sense of Coherence Scale into its theorized components, noting they were too highly correlated to be separated. This was shown to be true in the current study. As such, future research that is interested in the subcomponents of sense of coherence, rather than a global score of well-being, should consider using different measures to assess for comprehensibility, manageability, and meaning in life. The Mental Health Continuum

(Keyes, 2007), is one such option. Although the Mental Health Continuum measures slightly different components of well-being (emotional, psychological, social) compared to the Sense of Coherence Scale, it does provide a more psychometrically sound scale that can be provide a global well-being score in addition to subscale scores. Measuring the subscale scores among participants helps provide more useful information regarding worthwhile prevention or intervention targets.

Another important limitation includes the absence of survey items that explore participant's ethnic identity. Previous research has shown that a developed ethnic identity can serve as a protective factor by bolstering self-concept and feelings of self-worth (Whitbeck et al., 2001; Olson & Wahab, 2006). Importantly, ethnic identity among AI/ANs could serve as a potential resource and protective quality. As such, inclusion of a measure of ethnic identity would have allowed for the examination of ethnic identity as a moderator among acquired vulnerability and suicidality, and could have provided important information regarding targets for suicide prevention programming. Also of note, the current study included many AI/AN participants who identified as multiracial, which is representative of the larger AI/AN population in the United States. For instance, of the 5.2 million AI/ANs in the United States, only 2.9 million identify as AI/AN alone (CDC, 2010). However, this presents as an additional limitation, in that findings may not generalize to urban-based AI/ANs who do not identify with an additional race or ethnicity. The intersection of race, ethnicity, and culture among multiracial AI/ANs is likely a unique experience that does not fully represent those AI/ANs who are mono-racial. Additionally, the impact of this intersectionality on the development of distress and suicidality is an important contextual component to be considered. As such, the absence of survey items querying respondent's perception of oppression or discrimination throughout their

lives is another important limitation of the current study. Past research has demonstrated that the experience of historical trauma and systemic oppression contributes to AI/ANs increased rates of suicidal thinking and behavior (Yoder et al., 2006). The extent to which this is true among an urban-based sample, many of whom are multiracial, is an important consideration for future research.

Future Directions

The current approach to treating suicidality is crisis-oriented; intervening when people have already reached heightened levels of distress or once they have already engaged in suicidal behaviors. Crisis intervention, while necessary, does nothing to prevent the initial occurrence of suicidality and, therefore, has little-to-no effect in changing the systemic experiences that leads one to crisis. Groups of people who are disproportionately affected by suicide, such as American Indians and Alaska Natives, will always be disproportionately affected until changes happen on a more systemic level—changes that prevent the occurrence of suicidality by either preventing the occurrence of risk factors or by fostering access to protective resources. Researchers and clinicians are limited in their ability to prevent exposure to known risk factors, however, they can have a positive impact by determining and strengthening protective qualities.

The findings of the current study illuminated the complexity of predicting and preventing distress and suicidality. As with any psychological experience, progression from distress to suicidal thinking is impacted by innumerable individualized factors and the process in which these factors influence each other is convoluted and overwhelming. However, the results of this study can provide some guidance in where to focus future efforts. For instance, results suggest that sense of coherence may be the mechanism through which acquired vulnerability affects one's level of distress and suicidality. It has long been known that adverse childhood experiences

are important predictors of suicidality among AI/ANs. However, the current finding expands an understanding of this relationship. Additional research is necessary to further explore the mediating role of sense of coherence and its importance in suicide prevention among this population. Importantly, findings suggest that despite exposure to risk, an individual has the potential to generate a strong sense of coherence, which has repeatedly been shown to protect against suicidality. Further research is needed to determine the specific protective factors, or resources, that lead to the development of sense of coherence. Antonovsky (1997) suggests that internal and external resource contribute to one's sense of coherence. From a clinical perspective, important external resources may include access to culturally appropriate mental health services and providing outreach and programming through a culturally-relevant framework; both of which can be considered and implemented on a college campus. Research should also focus on identifying additional malleable psychological variables that act as internal resources and that can be intervened upon. This may include constructs such as resilience, self-compassion, self-esteem, and ethnic identity. A focus in this area will further advance prevention efforts by identifying which resources are most important in one's development of mental health and well-being. Additionally, research focusing specifically on AI/ANs can provide insight into the most culturally-appropriate resources that are impactful among these populations. Once these resources are identified, the focus can shift to exploring ways in which they can be effectively fostered and accessed by those with increased risk. Additionally, despite sense of coherence being a strong predictor of distress and suicidality, the current study found that there are additional variables that can thwart the protective nature of sense of coherence in the face of heightened risk. As such, future studies should explore what malleable psychological variables (i.e. mental illness, social disconnection, academic stress) influence the relationship between

sense of coherence and suicidality so that intervention, when necessary, can be done in a way that both decreases suicidality, while at the same time bolstering one's protective qualities. Importantly, more than 7 in 10 American Indians and Alaska Natives are now living in metropolitan areas, however, research focusing on the prevention of suicide among these populations continues to be heavily focused on reservation-based communities. It is imperative that future research continue the efforts of the current study by examining suicidality among urban-based AI/ANs. The nuanced intersections of culture, oppression, and sustained historical trauma among this unique, and often ignored population, must be acknowledged and addressed in future efforts. Fortunately, there has been a recent call to action by agencies such as the National Urban Indian Family Coalition and the Urban Indian Health Institute regarding the disparities in risk exposure and health outcomes, including suicide, among urban-based AI/ANs. These agencies provide grant funding for research focused the health disparities of urban Indian communities.

Most importantly, future research that seeks to better understand the unique experience of AI/AN individuals in order to reduce health disparities among these groups should strive to incorporate a community-based participatory research paradigm (CBPR). Community-based participatory research involves collaboration between tribal leaders and research institutions when addressing research agendas. A recent National Institute of Health (NIH) initiative advocates for the use of CBPR in AI/AN research as it gives voice to a usually silenced tribal perspective. Specifically, the NIH suggests working in equal partnership with tribal leaders and tribal institutional review boards to incorporate indigenous ways of knowing and community priorities (Jernigan et al., 2015). Unfortunately, incorporation of a CBPR paradigm was beyond the scope of the descriptive and exploratory nature of the current proposed study. However,

results from the current study may be used as a first step to inform and ultimately motivate research interest groups that have access to NIH funding for implementation of a CBPR paradigm in future AI/AN research endeavors.

Conclusion

Most people who experience suicide risk factors do not go on to develop suicidal ideation or engage in suicidal behavior. However, attempts at understanding and preventing suicidality have been primarily focused on identifying risk factors among those in crisis, while little attention has been paid to vulnerable individuals who are able to cope successfully in the face of stressful life experiences. A sole focus on risk is pervasive throughout the suicide literature on American Indians and Alaska Natives, who are an especially vulnerable population. As such, the goal of this study was to shift the focus of suicide research by identifying what keeps AI/ANs from experiencing distress and suicidality despite their increased exposure to known risk factors. Importantly, this study sought to expand the current base of AI/AN suicide literature by examining the experiences of urban-based individuals; thereby lending focus to an often-ignored subset of the population. Using Antonovsky's (1987) salutogenic approach and theory of sense of coherence, qualities that protect against suicidality in the face of unchangeable risk were explored.

Previous research has consistently shown that reservation-based AI/ANs have higher rates of suicide risk factors and higher rates of suicidality compared to the general population. The current study showed that these trends remain true for an urban-based college student sample as well, with AI/AN participants reporting significantly higher rates of adverse childhood experiences as well as higher rates of past 12-month distress and suicidality as compared to participants of other races. Importantly, AI/AN participants had similar levels of sense of

coherence—a sense of self variable that has been shown to protect against negative health outcomes and positively influence the experience of well-being. However, it was found that sense of coherence did not act as a protective buffer in the relationship between acquired vulnerability and suicidality. Despite sense of coherence having a significant and strong negative correlation with distress and suicidality, it seems as though the protective benefits of sense of coherence were not strong enough to withstand increased levels of childhood home challenges and abuse. Instead, it was found that greater exposure to risk factors may thwart the development of sense of coherence, thereby limiting its protective potential. Importantly, however, results showed that even in the face of adversity, one is able to develop a strong sense of coherence. Although sense of coherence is not entirely protective of suicidality, it is worth emphasizing the capability one has to develop and utilize protective psychological resources in the face of unchangeable risk. This study provides a crucial foundation that can be built upon to expand the scope and effectiveness of suicide prevention efforts that target AI/AN communities and individuals. The findings highlight the need for future research and policy that promotes well-being among urban-based AI/ANs by fostering development and access to various protective resources.

American Indians and Alaska Natives represent a population whose oppression in the United States has been maintained continuously for hundreds of years by ruthless and inexorable systemic inequalities and institutionalized racism. Upon colonization of the United States, the indigenous population was reduced from nearly ten million to fewer than one million through war, genocide, and disease. Those who survived endured forced relocation and assimilation into the dominant white culture as attempts were made to eradicate Native culture from the new world. Through all of this, however, the strength of the Native spirit has persevered, providing a

powerful example of resilience. Today, the AI/AN population in the United States is growing at a rate that surpasses the growth of the total U.S. population. Harnessing the strengths of the Native communities is vital in addressing the health disparities present among today's AI/AN population. The opportunity for resilience and success can foster an affirmative self-concept and self-efficacy among American Indian and Alaska Native young people, allowing them access to the propitious life they so desperately deserve.

The resilience and strength of the Native population is evident in the findings of the current study; participants represent a subset of the urban-based AI/AN population, who, even in the face of significant adversity, have obtained admittance into an institution of higher education, following a path toward personal growth and future opportunity. The ability to successfully navigate through difficult childhood experiences was evidenced by participants' developed sense of coherence; reflective of the tenacious drive and cultural perseverance that is fundamental to the Native way of life. Despite these strengths, it was unsurprising to find disparities in well-being that mirror those plaguing the general AI/AN population, with suicidality afflicting urban-based AI/AN college students at disproportionately high rates. This gives credence to the importance of this work, and while exploratory in nature, the findings of the current study establish a strong foundation from which to build in future research. Creating this foundation is merely the first step in halting the cycle of unworkable research that perpetuates inattention to the suicidal risk and suicide behavior of AI/AN young people. Identifying culturally relevant protective qualities and focusing on developing one's strengths is essential in shifting the current narrative concerning solutions for contemporary Native communities. Importantly, completing this study has been a humbling experience and a lesson in the complexities of such a task. However, to become immersed in Native culture is to become awed and inspired; and to become

steeped in the experience of American Indian and Alaska Native participants was hopeful and galvanizing.

Appendix A

Demographics Questionnaire

1) What is your age?
    1. Dropdown menu (18-95)

2) With the understanding that these categories might be limiting, how do you typically describe your gender identity?
    1. Male
    2. Female
    3. Transgender
    4. Other, please specify:

3) How would you describe your sexual orientation?
    1. Heterosexual
    2. Gay or Lesbian
    3. Bisexual
    4. Questioning
    5. Other, please specify:

4) With the understanding that these categories might be limiting, how do you typically describe yourself? (Select all that apply.)
    1. African American, of African descent, African, of Caribbean descent, or Black
    2. Asian or Asian American (e.g., Chinese, Japanese, Korean)
    3. Caucasian, White, of European descent, or European (including Spanish)
    4. Hispanic, Latino or Latina (e.g., Cuban American, Mexican American)
    5. Middle Eastern or East Indian (e.g., Pakistani, Iranian, Egyptian)
    6. Native American (e.g., Dakota, Cherokee) or Alaska Native

7. Native Hawaiian or other Pacific Islander (e.g., Samoan, Papuan, Tahitian)
8. Other, please specify:

5) What is your religious or spiritual preference (Select all that apply.)
1. None
2. Agnostic
3. Atheist
4. Buddhist
5. Christian (Catholic, Evangelical, LDS, Protestant, etc.)
6. Hindu
7. Jewish
8. Muslim
9. Native American spirituality/religion
10. Unitarian or Universalist
11. Other, please specify:

6) From which of the following have you ever received counseling or mental health services? (Select all that apply.)
1. Counselor, therapist, psychologist, and/or social worker
2. Psychiatrist
3. Clergy
4. Other medical provider (e.g., physician, nurse practitioner)
5. Alternative medical provider (e.g. acupuncturist, naturopathic doctor, massage therapist)
6. Other, please specify:
7. I have never received counseling or mental health services

7) Have you ever sought services from your college's counseling center?
1. Yes
2. No

8) Have you served in the military?
1. No
2. Yes, and I have been deployed to an area of hazardous duty.
3. Yes, and I have not been deployed to an area of hazardous duty.

Appendix B

Adverse Childhood Experiences Scale

Following are some questions about events that happened during your childhood. This information will allow us to better understand problems that may occur early in life, and it may help others in the future. This is a sensitive topic, and some people may feel uncomfortable with these questions. Please keep in mind that you can ask me to skip any question you do not want to answer. All questions refer to the time period before you were 18 years of age. Now, looking back before you were 18 years of age—

1) Did you live with anyone who was depressed, mentally ill, or suicidal?
    1. Yes
    2. No
    3. Don't know / Not sure

2) Did you live with anyone who was a problem drinker or alcoholic?
    1. Yes
    2. No
    3. Don't know / Not sure

3) Did you live with anyone who used illegal street drugs or who abused prescription medications?
    1. Yes
    2. No
    3. Don't know / Not sure

4) Did you live with anyone who served time or was sentenced to serve time in a prison, jail, or other correctional facility?
    1. Yes

2. No
3. Don’t know / Not sure

5) Were your parents separated or divorced?
1. Yes
2. No
3. Parents never married
4. Don’t know / Not sure

6) How often did your parents or adults in your home ever slap, hit, kick, punch, or beat each other up?
1. Never
2. Once
3. More then once
4. Don’t know / Not sure

7) Before age 18, how often did a parent or adult in your home ever hit, beat, kick, or physically hurt you in any way? Do not include spanking. Would you say—
1. Never
2. Once
3. More then once
4. Don’t know / Not sure

8) How often did a parent or adult in your home ever swear at you, insult you, or put you down?
1. Never
2. Once
3. More than once
4. Don’t know / Not sure

9) How often did anyone at least 5 years older than you, or an adult, ever touch you sexually?
1. Never
2. Once
3. More than once
4. Don’t know / Not sure

10) How often did anyone at least 5 years older than you, or an adult, try to make you touch them sexually?
1. Never
2. Once
3. More than once
4. Don’t know / Not sure

11) How often did anyone at least 5 years older than you or an adult force you to have sex?
1. Never
2. Once
3. More than once

4. Don’t know / Not sure

Appendix C

13-Item Sense of Coherence Questionnaire

Here is a series of questions relating to various aspects of your lives. Each question has seven possible answers. Please mark the number that expresses your answer, with numbers 1 and 7 being the extreme answers. If the words under 1 are right for you, circle 1; if the words under 7 are right for you, circle 7. If you feel differently, circle the number which best expresses your feeling. Please give only one answer to each question.

1. Do you have the feeling that you don’t really care about what goes on around you?

1	2	3	4	5	6	7
very seldom or never						very often

2. Has it happened in the past that you were surprised by the behavior of people whom you thought you knew well?

1	2	3	4	5	6	7
never happened						always happened

3. Has it happened that people whom you counted on disappointed you?

1	2	3	4	5	6	7
never happened						always happened

4. Until now your life has had

1 2 3 4 5 6 7
no clear goals very clear
or purpose at all goals and purpose

5. Do you have the feeling that you're being treated unfairly?

1 2 3 4 5 6 7
very often very seldom or never

6. Do you have the feeling that you are in an unfamiliar situation and don't know what to do?

1 2 3 4 5 6 7
very often very seldom or never

7. Doing the thing you do every day is

1 2 3 4 5 6 7
a source of deep pleasure a source of pain and boredom
and satisfaction

8. Do you have very mixed-up feelings and ideas?

1 2 3 4 5 6 7
very often very seldom or never

9. Does it happen that you have feelings inside you would rather not feel?

1 2 3 4 5 6 7
very often very seldom or never

10. Many people – even those with a strong character – sometimes feel like sad sacks (losers) in certain situations. How often have you felt this way in the past?

1 2 3 4 5 6 7
never very often

11. When something happened, have you generally found that:

1 2 3 4 5 6 7
you overestimated or you saw things
underestimated in the right proportion

its importance

12. How often do you have the feeling that there's little meaning in the things you do in your daily life?

	1	2	3	4	5	6	7
very often							very seldom or never

13. How often do you have feelings that you're not sure you can keep under control?

1	2	3	4	5	6	7
very often						very seldom or never

Appendix D

Mental Health Continuum—Short Form

Please answer the following questions about how you have been feeling during the past month. Select the option that best represents how often you have experienced or felt the following.

During the past month, how often did you feel…

1. Happy?
    1. Never
    2. Once or Twice
    3. About Once a Week
    4. About 2 or 3 Times a Week
    5. Almost Everyday
    6. Everyday
2. Interested in life?
    1. Never
    2. Once or Twice
    3. About Once a Week
    4. About 2 or 3 Times a Week
    5. Almost Everyday
    6. Everyday
3. Satisfied with life?
    1. Never
    2. Once or Twice
    3. About Once a Week
    4. About 2 or 3 Times a Week
    5. Almost Everyday

6. Everyday

4. That you had something important to contribute to society?
    1. Never
    2. Once or Twice
    3. About Once a Week
    4. About 2 or 3 Times a Week
    5. Almost Everyday
    6. Everyday
5. That you belonged to a community (like a social group, or your neighborhood)?
    1. Never
    2. Once or Twice
    3. About Once a Week
    4. About 2 or 3 Times a Week
    5. Almost Everyday
    6. Everyday

6. That our society is a good place, or is becoming a better place, for all people?
    1. Never
    2. Once or Twice
    3. About Once a Week
    4. About 2 or 3 Times a Week
    5. Almost Everyday
    6. Everyday
7. That people are basically good?
    1. Never
    2. Once or Twice
    3. About Once a Week
    4. About 2 or 3 Times a Week
    5. Almost Everyday
    6. Everyday
8. That the way our society works makes sense to you?
    1. Never
    2. Once or Twice
    3. About Once a Week
    4. About 2 or 3 Times a Week
    5. Almost Everyday
    6. Everyday
9. That you liked most parts of your personality?
    1. Never
    2. Once or Twice
    3. About Once a Week
    4. About 2 or 3 Times a Week
    5. Almost Everyday
    6. Everyday
10. Good at managing the responsibilities of your daily life?

1. Never
2. Once or Twice
3. About Once a Week
4. About 2 or 3 Times a Week
5. Almost Everyday
6. Everyday

11. That you had warm and trusting relationships with others?
    1. Never
    2. Once or Twice
    3. About Once a Week
    4. About 2 or 3 Times a Week
    5. Almost Everyday
    6. Everyday

12. That you had experiences that challenged you to grow and become a better person?
    1. Never
    2. Once or Twice
    3. About Once a Week
    4. About 2 or 3 Times a Week
    5. Almost Everyday
    6. Everyday
13. Confident to think or express your own ideas and opinions?
    1. Never
    2. Once or Twice
    3. About Once a Week
    4. About 2 or 3 Times a Week
    5. Almost Everyday
    6. Everyday
14. That your life has a sense of direction or meaning to it?
    1. Never
    2. Once or Twice
    3. About Once a Week
    4. About 2 or 3 Times a Week
    5. Almost Everyday
    6. Everyday

Appendix E

Distress and Suicidality Continuum and Suicidality Questions

1) During the past 12-months, did you have any thoughts similar to the following? (Select all that apply.)

Yes No 1) This is all just too much.

Yes No 2) I wish this would all end.

Yes No 3) I have to escape.

Yes No 4) I wish I were dead.

Yes No 5) I want to kill myself.

Yes No 6) I might kill myself.

Yes No 7) I will kill myself.

2) During the past 12 months, have you seriously considered attempting suicide?

Yes No

3) During the past 12 months, did you attempt suicide?

Yes No

4) (If Q3 = Yes) How many suicide attempts did you make in the last 12 months?

1) 1
2) 2
3) 3
4) 4
5) 5 or more

Appendix F

Intraclass Correlation Coefficients

Adverse Childhood Experiences Scale (ACEs)

Item: ACES1	0.0053
Item: ACES2	0.0069
Item: ACES3	0.0056
Item: ACES4	0.0070
Item: ACES5	0.0160
Item: ACES6	0.0062
Item: ACES7	0.0103
Item: ACES8	0.0049
Item: ACES9	0.0075
Item: ACES10	0.0068
Item: ACES11	0.0026

Sense of Coherence Short Form (SOC-13)

Item: SOC1	0.0079
Item: SOC2	0.0066
Item: SOC3	0.0078
Item: SOC4	0.0065
Item: SOC5	0.0038
Item: SOC6	0.0062
Item: SOC7	0.0022
Item: SOC8	0.0079
Item: SOC9	0.0053
Item: SOC10	0.0037
Item: SOC11	0.0026
Item: SOC12	0.0041
Item: SOC13	0.0051

Mental Health Continuum Short Form (MHC-SF)

Item: MHC1	0.0185
Item: MHC2	0.0108
Item: MHC3	0.0149
Item: MHC4	0.0103
Item: MHC5	0.0219
Item: MHC6	0.0159
Item: MHC7	0.0131
Item: MHC8	0.0202
Item: MHC9	0.0117
Item: MHC10	0.0122
Item: MHC11	0.0090

Item: MHC12	0.0053
Item: MHC13	0.0033
Item: MHC14	0.0102

Distress and Suicidality Continuum (DSC)

Item: DSC1	0.0049
Item: DSC2	0.0030
Item: DSC3	0.0041
Item: DSC4	0.0038
Item: DSC5	0.0027
Item: DSC6	0.0046
Item: DSC7	0.0017

Additional Suicidality Questions

Think Suicide	0.0043
Attempt Suicide	0.0016
Times Attempt	0.1747

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